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And American Gardener's Assistant.

VOL. 5. NO. 1. ERIE, PA., MAY, 1891. FIFTY CENTS A YEAR.

Gardening.

By James I. Baird.

For the Farm and Vineyard.

For a start in gardening in a small way there need not be any great outlay, especially where one has possession of a few rods of ground. A little expense is necessary, of course, for breaking, manure and seeds, but to a limited extent, these can be procured by any man who makes any support at all for his family. For a poor man who has a little land or can procure it at reasonable rates, near a small town, where there is not so much competition, nor so much fastidiousness as to quality, there is nothing more promising, perhaps, for such to engage in than gardening It is seldom that a village of a thousand or more inhabitants does not offer a pretty fair market for garden productions, especially for early products, as beets, radishes, tomatoes, beans, early corn, melons and early cabbages; and with these earliness is the object, as demands are greater and prices better. And though the garden may be poor, early vegetables can, with a little manure and good cultivation, be produced, as the spring weather is more congenial to the poor soil than the arid summer season. And thus while making some money on these earlier productions, the manuring and cultivation is measurably bringing up the fertility of the garden.

The manure for the garden should be composted if possible, as crude or raw manures are injurious to many kinds of vegetables. The more thoroughly manure is composted, or rotted, the better every way for the garden. Take leaf-mould, or loam, or sods, and mix it in alternate layers with the manure; these add to the effectiveness of the compost, as well as to the quantity. Keep the compost heap moist, and covered with sod or soil, so that as much of the escaping gases be retained as possible. And a short time before the compost is to be used, the heap should be turned, that it may become dry and friable, and easier disseminated.

So soon in the spring as the ground will work fairly well, break the ground deep and work it thoroughly with harrow and drag. If there be compost sufficient to give the garden a thorough dressing, break it just after the plow, then it will work well in the soil by the harrow and drag.

Having the ground thus prepared, mark it off with a shovel-plow, the furrows at such distance apart as the nature of the vegetable to be planted therein may require, then—if the soil has not already been well manured by broadcasting—fill in with the manure from the compost, rake over it a little of the soil, then plant. Always take care to drop in a few seeds more than are desired to let grow, for with early vegetables, especially, one wants no delay. It is the practice with many gardeners to sprinkle ashes over the rows, and with some to saturate the soil with a solution of copperas, as a precaution against insects.

The preparation and working of the soil is much the same for other and later garden truck, as that for the earlier. Thorough breaking and pulverizing of the soil, with a plentiful supply of good composted manure, and careful cultivation is requsite; and, with these, and the exercise of common sense in handling and marketing, few that try gardening will fail to reap profits pecuniarily, besides a liberal share of vegetables for their own tables.

Cut Leaved Weeping Birch.

Poultry raisers should take the *Fanciers Review*. It is full of useful information concerning poultry for profit, poultry for exhibition; in fact it is indespensible to the poultry raisers. Fifty cents gets the *Fanciers Review* and Farm & Vineyard, both one whole year.

Don't subscribe to any paper till you have written to us for our prices. In most all cases we can give you two papers for the price of one.

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INV. '60

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FROM REPORT OF ILLINOIS STATE HORTICULTURAL SOCIETY.

Secretary A. C. Hammond's Report.—Wonderful Results from Spraying.

Mr. A. C. Hammond, Secretary of the Illinois Horticultural Society, in relation to best medium for throwing insecticides upon trees, says: "A year ago I determined to experiment in the Spring with arsenical poisons, but the bloom was so light that I hesitated to incur the expense, finally concluding to treat one orchard at least. I therefore ordered a Lewis Combination Force Pump (manufactured at Catskill, N. Y.,) and a quantity of London Purple for the purpose. I then took the heads out of two fifty-gallon barrels, and after boring a large hole in each of them, in which I kept a stick for stirring the mixture, I p[illegible] them in the barrels for floats. I then pla[illegible]em as nearly in a wagon and fill[illegible]cable, say about full of water [illegible]ch. A pound of London [illegible] 40 gallo[illegible] was then thorough[illegible] mixed do[illegible] of water and divided betwe[illegible] two barrels and stirred unt[illegible]er. poison was well mixed with th[illegible] for I found that two men were [illegible]one to the work (a man and a b[illegible] in which drive and keep the pail [illegible]d the other the pump worked fille[illegible] driver was directed to use the pump. [illegible] rected to drive v[illegible] slowly along one side of the row [illegible]nd back the other, and the man with the pump, which throws a fi[illegible] spray fifteen to twenty feet high, [illegible] use great caution and see that each part of the tree was reached and so thoroughly wet that the water would drip from the leaves. The spraying was done the 1st or 2d of June, when the apples were as large as a half-grown cherry, but I think it should have been done a week earlier, just after the bloom had dropped. The second application was made ten days later. From these sprayed trees, about 300 in number, I gathered 500 bushels of apples, from 60 to 75 per cent. of which were perfect, and 85 per cent. marketable, while from the same number of trees in adjoining orchards I did not gather a peck of perfect fruit. The result was astonishing to me, and I have hesitated to publish it, knowing how dangerous it is to form hasty conclusions, but as there is not in all probability another orchard that has produced so much perfect fruit, there must be some cause for it; and after carefully looking over the ground, I have concluded that the London Purple saved the fruit. The mixture that I used was too strong and scorched the leaves somewhat. Next year I shall use a pound of London Purple to three barrels of water (about 120 gallons of water), and am inclined to think that even a weaker mixture would be just as good. [One pound of London Purple to two hundred gallons of water is the right proportion.] With the cheap pump that I used two men can go over a ten acre orchard in a day. It therefore seems to be unnecessary for the ordinary orchardist to invest in high-priced machinery for the purpose. Some of our scientific men tell us that applications of this kind cannot possibly kill the curculio; be this as it may, the apples in this orchard have for several years been badly stung by this pest, but this season they have injured but very little, and when asked if the London Purple killed them, I can only answer, I don't know. If it did not, why did this orchard show so much [illegible]ss of their work than others? This [illegible]periment has been tried in various p[illegible]ts of the State, and, as far as I know, with unvarying success. Hon. B. [illegible]ullen of Centralia, writes: 'On accou[illegible]t of delay in receiving the pump, I was only able to experiment in a small way. I should have been at work two weeks earlier, but the result was very satisfactory. I used one pound of London Purple to [illegible] of Paris of water, and a large sp[illegible] and burn[illegible] Green; this was too [illegible]xtent. I shall [illegible] the leaves to [illegible] to 150 gallons of hereafter use Paris Green. The only water, and all and Winter fruit that marke[illegible] from these sprayed trees; I had as it was and light as the crop [illegible]sed to be, I am sure that it would have been worth at least $400 had I completed the work, but was compelled to quit to pick strawberries.'"

Lewis Spraying Outfit referred to in the above article is fitted with an extra fine graduating spray nozzle for grape vines. They are endorsed by the leading Entomologists of the U. S. Mr. Lewis also published a catalogue on "Will it pay to spray your fruit trees." This catalogue is full of valuable information, and should be in the hands of every fruit grower and horticulturist. The catalogue is sent free. I would advise our subscribers to send for one of them. Address P. C. Lewis, Catskill, N. Y."

LOOK AT THIS! The FARM AND VINEYARD and the *Buffalo Express*, both a whole year for $1.00.

Melon Culture.

BY JAMES I. BAIRD, of Kentucky.

For the FARM AND VINEYARD.

The best soil for melons is a light, warm, loam, and if newly cleared or if it has not been under cultivation for two or three years, it will be so much the better. Whatever tends to compact the soil, whether rainy weather or a want of sufficient vegetable matter in the soil, is detrimental to the crop. Hence new land, or sod land well rotted and broken, is so fine for melons, as such is not liable to pack.

The soil should be well broken and fined down, and during this process, if the manure be plentiful, broadcast it and let it be mixed with the soil. If the manure is to be applied only in the hill it should be well rotted. The best manure, or as good as the best, to use for this purpose, is stable or poultry manure, composted with well-rotted leaf-mould. Compost it early, so that it may become well rotted and assimilated before it is to be used. This, however, does not give the plant so quick a start as some of the commercial fertilizers do—a little of which may be sprinkled in the hill for this purpose—but will sustain the vines longer, and they will yield more and larger fruit.

It is preferable to mark off the ground both ways, 6 or 8 feet apart. Make large, flat hills at the crosses, in the bottom of which may be dropped a little corn-fertilizer to give the vines a rapid start, if desired. In the [illegible] dle of the hills plant 8 or 10 se[illegible] [illegible]rt. So [illegible] not crowding, but a little often saves many seeds thus plan[illegible]ting later on, trouble of again [illegible]ate. Besides some when, perhaps, much stronger plant seeds send [illegible]nd thus the more vigorous than other can be obtained, and the ous or one pulled out. However, we all to grow for a few days to test the hardiest plants, then remove all but two of the hardiest in each hill, which, as a rule, are likely to be most productive.

Begin cultivation early; stir the hills gently, with a rake is best, or even if the soil near the plant be stirred with the hand, would be less liable to bruise the tender stems which, if done, is worthless. Keep the soil between the hills stirred with a cultivator, as long as it can be done without injury to the vines, after which, keep down grass and weeds with the hoe, till the vines cover the ground.

As to insect pests, the "melon bug" being the worst, they in most cases have to be put down by "force of arms"—*i e.* captured and killed. Some times, however, they are driven away by remedies. Soot or lime put around the vines, deter those that attack the vines near the roots, which is the habit of the melon bug. Perhaps soot mixed with cayenne, is about the best remedy.

Some cultivators top their vines, but it is questionable whether anything is gained by it, as laterals will put out, and tax the vine as much as the vines untopped would have done. However, if these be kept off, possibly the vines will produce some larger melons.

In selecting melons for market or home use, it is desired that they should be fully ripe. To well determine this requires some practice and discrimination. A melon, however, when fully ripe bears that appearance to the discerning eye, The white parts become slightly dun, and the whole bears a yellowish cast, the rind hard, and the pulp brittle. Such a melon slightly pressed with the hand will audibly rupture within, and no fears need be entertained as to its ripeness.

Any lady who accepts our "premium" offer on page 4, and is not well satisfied with her bargain will have her money refunded on application.

Profits of Grape Growing.

BY G. W. STEBBINS, Chautauqua Co., N. Y.

For the FARM AND VINEYARD.

With the awakening of spring, new interest in grape growing is being developed in this locality, and while other farms are hardly ever sold and are often abandoned to a mortgagee, grape farms are constantly changing hands at good prices. The demand for table grapes is growing faster than the area of vineyards, and that is at no mean gait, the production of grapes having increased in this county from nearly two million baskets in 1889 to nearly six million baskets in 1890. Last fall, Squire White, of Fredonia, published tables according to which a man could pay $150 per acre for grape land, and in five years, paying for land, interest, taxes, and all cost of setting vineyard, labor, etc., have the vineyard paid for and about $600 over.

Here is data from which anyone may figure for himself. Land, $150; roots, $6.00 per acre set 8 or 9 feet apart; at $15 per thousand, $10; 200 posts at 6 cents each, $12; 600 lbs. of wire at $3 per 100 lbs., $18; $10 for staples and other incidentals, foots up $200 per acre for an established vineyard, except the labor, which may be freely put at $25 per acre per annum.

In three years the grapes begin to bear. The cost of baskets, picking, packing, etc., will be about 5 cents per basket. When grapes bring 25 cts. per basket, they are worth 20 cents on the vines.

A fair day's work for a picker is 85 baskets, and a packer will average a little less. Wages, 75 cents to $1.00 per day. Grape lands are let for a term of years at the following rates: The owner furnishes land, roots, posts, wire, etc., and half the baskets. The tenant does all the work and finds half the baskets, and each has half the crop. A crop of beans or roots may be raised among the vines; the first two years this belongs to the tenant.

The average production of vineyards in the town of Portland, is said to be two tons per acre. Crops of five and six tons per acre are not uncommon. The best crop recorded was obtained by Gerry Ryckman from a half acre of Niagaras, which was between five and six tons from the half acre.

The account may be thus stated:

Cost of vineyard	$200
Labor, 6 years, $25 per year, which is a fair price, a man tending 12 acres easily which would give him $300 per annum. He having root crop for extra work first two years	$150
Total cost	$350
Average crop of 2 tons per acre, for 4 years, 8 tons, or 1776 baskets at 20 cents per basket on the vines	$455,20

If the owner of the vineyard obtained a heavy crop, of course the profits would be heavy also.

ACTIVE AGENTS WANTED in every village and township You can make money during the winter months. Address for particulars, FARM AND VINEYARD PUBLISHING CO., Erie, Pa.

Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 50 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

ITEMS OF INTEREST.

Grape Rot.

A New York grape grower claims that the liability to rot is diminished in proportion as the vines are high. There is always less rot at the top than at the bottom of the trellis. Where vines are allowed to grow over the branches of trees, with little or no care, there is but little rot and the vines are remarkably healthy and productive.

In the stables of the Adams express company at Boston a five horse power electric motor operates two machines for grooming horses. With the new machines two men can groom a horse in five minutes.

It is desirable in the spring to clean up as thoroughly as possible and get all the manure out on the fields before finishing up the seeding and planting.

It is proposed doing away with the old system of lightning rod protection, and replacing the rods with narrow ribbons of copper, which will use up the energy of the lightning and save the building from destruction.

In planting corn deep the cultivator should be used, going close to the row and throwing the soil to the row; this should be done as soon as the planting is done, and as soon as the cultivation is given the soil should be levelled down and made firm by harrowing.

Deep culture of the soil and deep planting and sowing of all crops comes nearer to complying with the injunction to "till the ground" than mere surface scratching of the soil. The "ground," not the top of the ground must be cultivated.

The roots of the crop starting out below the cultivator line will be where moisture can be obtained even in a dry time.

Raspberries for the Home.

BY HELEN WHARBURDON.

For the FARM AND VINEYARD.

The raspberry canes are bursting forth their leaves and buds now, and a little forcing may not do them any harm. As soon as one is reasonably sure that the last frost of the season is past, an application of a little liquid manure to the canes will have a beneficial result. It will stimulate the canes, and force them into quick blooming and bearing. This should not be done to all of the canes, only to a few of the early varieties. It is not desirable to have them all bear at the same time, but the fruiting period should be extended over as long a period as possible.

The variety of raspberries which is best for the market is seldom the one for the home-garden. As a rule, we want better fruits for the home than those we ship to market. For the market the Brandywine is a good berry, for it is so dry and hard that it keeps its shape and color in transportation, and produces abundant crops. Of late years gardeners have made great improvements in the raspberry, but unfortunately they have all been along the same line. They have sought to get a berry that will yield more per bush, and of a good shipping quality. As a result quality and juiciness have been sacrificed, and to get a good berry for home use it is almost a necessity to fall back on the old kinds, which nurserymen have now almost ceased to grow. They grow for the market, and they have to keep up with the times. None of the qualities desired by the market-men are required for the berry grown for the home, such as firmness, shape, hardiness and color. Quality and juciness are the two characteristics which recommend the raspberry for home use, and these are abundantly found in the old varieties, such as the Orange, Fastif, Franconia, Hornet and Herstine. All of these varieties are sweet and juicy, and though they may not stand shipment, they certainly make a delicious berry for the table. They are not as hardy probably as some of the newer red varieties, but this is only a minor consideration in our gardens. They are not grown so extensively there but the canes can be bent down late in the autumn, and a few shovelfuls of dirt thrown over them. A good garden of these old varieties can be made by planting them four by six feet apart, and by tying them to a single wire. The space between them can be used for other crops, especially for cucumbers. The canes will not interfere with these vines, and the winter's supply of pickles can easily be grown in the raspberry garden.

Show this paper to your neighbor and tell him it costs 25 cents a year. If he don't want to subscribe for a whole year he can have it on trial at the following rates: three months, 10 cents; or, six months, 15 cents. Subscribe now, while the offer is open.

Points about Potato Culture.

BY S. W. CHAMBERS.

For the FARM AND VINEYARD.

Seaweed is a great fertilizer for potatoes whenever it can be obtained. It is sometimes called "wrack" by the fishermen-farmers who live along the Atlantic coast, and by whom it is extensively used as fertilizers. Some of the finest potato fields are found attached to the gardens of these farmers, and in dry seasons their vines have a rich, green appearance. Sometimes the potatoes grown on fields that have long been fertilized with seaweed have a disagreeable flavor, but usually this is not noticeable. The seaweed is gathered from the rocks and meadows, or directly from the ocean. The bays and inlets are good places for it, and when the tide is down tons of it can soon be gathered. The best way to use it for potatoes is to gather it in autumn, and mix it with stable manure over winter. By spring the mass will be well rotted, and mixed in a fine, homogeneous body. Guano, bone dust, superphosphate, or rich muck and lime would probably give as good a potato yield as the seaweed fertilizer mentioned. Unleached, or even leached, wood ashes certainly would, and these are the best possible fertilizers for potatoes grown in a moderately good soil, with little or no sand in it to be easily leached through. The seaweed, however, is much cheaper than any of the above, and, if its effect is as good it should be used in preference to any other fertilizer when obtainable.

There are two ways to lessen expenses in potato growing, and these are by lessening the cost and by increasing the yield. The first is the surest, and any saving of time, labor and money that does not decrease the yield is clear profit. Plowing in fall to save time, using only the best seed, and adopting systematic methods, are the means of accomplishing such a result. Objection has been made that potatoes are an exhaustive crop; but this is a mistake, evidently, for it leaves the ground in a splendid condition for wheat. In my own experience I have adopted this rotation: clover, potatoes and wheat seeded with clover, and find that the land steadily increases in value. In one instance I found that a change of seed gave an increase to the potato crop of nearly sixty bushels to the acre. One should then put considerable stress opon the question of seed, and not experiment with some highly advertised seed that he knows nothing about. If a new seed is to be tried confine it to a few hills, and do not attempt to plant a whole field with it. Some varieties of vegetables in all classes invariab y yield more than others. Potatoes are no exception to the general rule.

The Farmer's Innings.

Look out for the boom! It is coming right along. The cloud of agricultural depression is fast rolling away and is found to have a silver lining. Not for years has the first of April witnessed such an advance in prices and such a solid basis for its continuance. Good times can't be much longer put off. The farmer is going to have his innings. He feels it. He is taking hold of the season's work with more vim and hope than for many a day. Now let us take every precaution to raise crops in quantity and quality that shall command the best prices. Study co-operation and get ready to work together in buying and selling. The time to make co-operation pay and farming profitable is when the boom is on. Let us keep cool, whittle down expenses, avoid extravagance, pay our debts, accumulate property and buy a famous Libertyville hand-made harness, as per advertisement in this issue. Then if depression comes again in a few years farmers will be in fine shape to weather the storm.

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Do you want to earn money this winter? Write for our special cash offer to agents.

We pay cash to agents who work for us, getting subscriptions to the FARM & VINEYARD.

Politicians look at this if you are interested in farmer's politics, read the *Farmer's Record*, the official organ of Farmer's Alliances. The *Farmer's Record* is published at $1.00, but we will send you FARM & VINEYARD and the *Farmer's Record*, both one year for 80 cents.

ORCHARD AND GARDEN.

FRUIT GROWING AND GARDENING FOR AMATEURS AND PROFESSIONALS.

The Carman, the Bailey and the Husmann, Three Promising Grapes Produced by Hybridizing a Wild Texas Kind with Well Known Cultivated Varieties.

We extract from Rural New Yorker's description a cut of the Carman grape, along with items concerning the Bailey and the Husmann. These grapes owe their origin to the efforts of T. V. Munson, who produced them while experimenting in hybridizing the Post Oak grape of Texas with pollen of the Herbemont, Triumph Cynthiana and other good varieties.

THE CARMAN GRAPE.

The grape shown in the cut is the outcome of the Post Oak grape hybridized with Herbemont. It has borne four successive years. The vine is vigorous and begins bearing in the second year, producing immense crops of medium to large clusters of medium to large berries, of a very dark purple, almost black, when fully ripe. The quality is excellent, skin thin and tough, pulp tender, juicy, rich and sprightly, similar to that of Herbemont, but ripening earlier than that variety, though later than Concord—about with Catawba, or perhaps a few days earlier.

The Bailey, which is of the lot hybridized with the Triumph, produces medium to large, compact, long, cylindrical clusters of medium to large black berries of very good, pure quality. It ripens a little later than the Concord.

The Husmann ripens a week or more later than the Concord. Its clusters are large to very large. The berries are black and of good quality, with no "foxiness" or other objectionable flavor. This variety is very prolific.

Single Chrysanthemums.

Slowly but surely single chrysanthemums, the most beautiful of all selections, are gaining in public favor, and ere another season or two they will be as much prized as single dahlias have been. Apart from their utility as cut flowers, they are equally serviceable for conservatory decoration. When properly managed, plants of a dwarf, bushy growth can be obtained, and these literally covered with bloom. The treatment necessary to the successful cultivation of single chrysanthemums is of course pretty much the same as is given to the ordinary kinds. No barbarous training should, however, be adopted, but the plants let grow in as natural a manner as is consistent with tidiness. The best way is to grow them as bushes, in a similar manner to that practiced upon pom-

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THE POULTRY YARD.

Do Poultry Farms Pay?

So far as keeping poultry on a large scale is concerned, whilst believeing that poultry might be kept in very much larger numbers on farms, we do not for one moment advocate what is known as poultry farms. A poultry farm may, however, be successful as such, without being so in a pecuniary sense; and on this point it is our conviction that commercial poultry will only pay as an accessory to something else, whether it be a farm or a household, to eat scraps which would be otherwise lost, and to utilize that which would be otherwise wasted, and to give to the land in the shape of manure, properties which cannot otherwise be obtained except by a heavy outlay.

"Turkeys are very easily managed," says Henry Stewart "The flock may be driven about quite easily, and if dealt with gently and quietly, are the most docile of all poultry. I have seen flocks of them driven to market in Kentucky, numbering several hundred, one man on a mule following, with two boys and a dog to help. It is in this way that the enormous number of these birds, 400,000 it is said, are gathered in Bourbon county, in that state, for the New York market every season, bringing in a handsome sum to the ladies, who make a special business rearing them, and are very successful at it."

Straw for Chickens.

Nothing is cleaner or more pleasant for the fowls to scratch in than nice clean straw. Put it away from where the fowls roost. It should be changed once a week. The grain should be scattered in it, as this gives the exercise which in cold weather is the life of a fowl and means good circulation of the blood; this always brings good health. Fowls must have something to keep them active. When they become lazy and stupid, don't be surprised if some of them become sick in time.—*N. E. Farmer.*

A great many persons do not know that the White Guinea is really a very valuable bird. They have a great many points to recommend them. They are good layers, good mothers, are excellent for the table, and last, but not least, are better than a watch-dog to give alarms.—*The Poultry Monthly.*

Orchard and Garden and FARM & VINEYARD, both one whole year for 65 cents.

Specialty in fruit growing can often be made very profitable, but the quality must be of the very best.

The *Rural and Poultry World* is a very neat and practical journal, published at 50 cents a year. Anticipating the wants of our readers, we have made arrangements to supply the *Rural and Poultry World* and FARM & VINYEARD, both one whole year for 50 cents.

The Bee Hive.

BY ANNIE C. WEBSTER.

For the FARM AND VINEYARD.

Spring management of bees is an important part of the apiarist's work. As soon as the red buds of the soft maple have put forth their heads, natural pollen for the bees will be plentiful. This usually occurs in May, and during this month large quantities of brood are raised. The soft maple is almost universally distributed; but in localities where it cannot be found, nor the willows either, it is well to place in some sheltered place where the wind cannot come some unbolted rye-flour, mixed with saw-dust or cut straw. Warm feed should be placed near the hive every night if there are not enough honey producing plants in the neighborhood, or if the weather continues cold, wet and damp. The object is to get the stock to increase rapidly, and the more good food that the bees get the faster will the stock increase. If rainy and cold weather sets in, and the honey is scarce, the bees will begin to destroy their work by throwing out the hatching brood. The greatest care is thus required to see that they are well supplied with appropriate feed, whether the weather be fair or unpleasant.

The time of transference from old box-hives to movable frames is when the fruit trees are in bloom. In doing this work, however, the brood-nest should not be exposed too long, as it is liable to get a chill which would ruin everything. If honey is scarce robbers will be flying around, ready to enter the hive. The moth miller, especially, will be prepared to begin its destructive work.

The care of the bees during the spring also depends on the object for which they are kept. If they are kept for increase alone, they sheuld be fed every night until honey, is abundant in the woods and fields. As fast as the combs become filled by the queen insert new ones, which the queen will begin to fill with eggs. If the combs are full of honey so much the better. When the drones commence to hatch, the colonies should be divided, taking the queen to the new stand. A new queen will soon be reared by the old colony. In this way the stocks can be about doubled in one season.

Of course, if honey is the main object in keeping the bees, top boxes should be added as soon as the bees begin to hang out. The full boxes should be removed, and empty ones put in their place. When the boxes are full of honey the bees will hang out, and frequently build queen cells and leave the hive in a body.

Silage Corn.

For the FARM AND VINEYARD.

The cultivation of silage corn differs from ordinary corn culture somewhat, for the results aimed at are far from being the same. Sufficient attention has not been given to the subject, even in our large corn growing districts. Such corn should be selected for planting that seems the best adapted to the locality, and which produces large, luxuriant growths, with valuable nutritive qualities. The main object is to secure large, succulent crops, which will increase the profits and nutritive qualities of the whole mass.

In my own experience I have found that the best silage-corn can be grown on clover sod, which should be turned over and mellowed thoroughly the same as for the ordinary corn crop. The best distance to plant the drills is about three and a half feet apart, and never putting much more than eight quarts of seed to the acre. A seed should be dropped about every six or seven inches in the drill, which may be done by hand or with the planter. The planter is superior to the hand for dropping the seed, for it presses the soil over the seed, and depresses the row about an inch below the surface. Weeds can be exterminated by dragging the field once before the plants are up, which will be of great value to the corn. After this the cultivation should be shallow, for if the roots are mutilated in the least the plants will be checked for several days in their growth. Thin planting is essential to silage-corn, for it gives plenty of air and sunshine, and tends to produce well developed growths of stocks, and full, large ear-growths. Heavy crops are essential for the silo, and this should be secured if possible. At the last cultivation of the corn, rye may be sown among the corn at the rate of two bushels per acre, which will spring into growth and crowd out the weeds as soon as the corn is cut. Later in the year clover-seed should be sown with the rye, and the two cut off early the next spring for hay. The sod then that is turned under gives the corn plant the most valuable of vegetable foods.

Fruit Tree Irriga ion.

For the FARM AND VINEYARD.

Irrigation for grains and the small fruits is now generally recognized as necessary in all advanced farming, and it is practised almost universally. High feeding and plenty of water are essential to one crop as another, and it is unscientific to say that large fruit trees do not demand the same. Fruit trees do not respond as quickly to such treatment as the smaller fruits and grains; but this is due to their size, slowness of growth, and almost imperceptible change.

During the last few years several tests have been made with apple and pear trees. The earth under each tree has been kept in clean cultivation, water was copiously supplied through the summer and fall seasons, and after the year's growth had been completed phosphate and potash fertilizers were supplied liberally. This treatment was begun when the trees were young, before the character of the trees had been formed. The result has been that the trees have put on a good growth, and yielded good, rich foliage, and fine crops of fruit.

Fruit tree irrigation is not confined to any selection. There are to-day several orchards in our far northern states where tender varieties of apples are growing, although the same apples are not considered hardy enough for localities far south of these same states. The only difference is that the apple trees in one section are supplied with abundance of water and food, and in the other they are cared for in the old fashioned way, that is, by letting them take care of themselves.

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Send in your Clubs and give us the name of your express office. The charges will not be excessive as the washer is light and must in all cases be paid by the receiver. Address,

FARM & VINEYARD PUB. CO., Erie, Pa.

ORCHARD AND GARDEN.

HORTICULTURAL SUBJECTS CONSIDERED IN A PRACTICAL MANNER.

Facts in Asparagus Culture—Too Close Planting an Error with Most Cultivators—For Extra Fine Plants Sufficient Space Must Be Allowed.

There is probably more difference in the quality of asparagus that finds its way to the market than in any vegetable grown. The small inferior sort is largely due to two causes. It has been cut too soon, and the plants grow too closely together. In considering these faults Prairie Farmer says:

Asparagus requires usually at least three years from the seed before it is fit for the market, else its supply would fluctuate like common vegetables, whereas, as a rule, a fair price can nearly always be depended on except, perhaps, for a short time toward the last of the season, when all other vegetables become more plenty.

STOOL OF ASPARAGUS—ROOTS AND CROWNS.

The French gardeners are noted for asparagus culture, and ship vast quantities even to the London market besides supplying their own liberally. What they do ship is always very large, and this is not obtained by "colossal" kinds, as some would have one suppose who have seeds or plants for sale, but by giving each plant much more room to grow in. Here, as in England, it is the more common practice to have beds planted as close as one foot apart in the rows, and not over eighteen inches between the rows; the consequence is that in a very short time the plants are crowding each other for room, and as in the case of every other crop, a much smaller growth is the consequence.

In France these are never planted at a less space than two feet apart each way, and for extra large specimens as much as from three to four feet is allowed. A good medium distance would be three feet in rows and eighteen inches between, which on large market plantations gives a chance to work a horse cultivator to clean from weeds. Many persons imagine at these great distances a serious loss is obtained, but this is not so, as when the shoots have abundance of room to spread in each plant produces a forest of stout roots that would surprise those who dug up one of the plants for examination.

Setting Plants Too Deep.

It is well known that it is an unsafe thing to set a young tree much deeper than it originally stood in the nursery. The same principle seems to apply to young vegetables, according to experiments conducted at the Ithaca station. Two hundred plants of Wakefield cabbage were set deep and shallow in alternate rows—the deep ones sunk up to the first leaves, the shallow ones at the same depth that they stood at in the seed bed. The deep set plants gave only seventy-seven solid heads in a hundred; the shallow set produced eighty-five solid heads, and these weighed 12 per cent. more than the deep ones. The ground planted was a heavy soil. Country Gen[illegible] suggests that there would proba[illegible] difference in a light soil.

Orchids and Their Requirements.

We find in Garden and Forest the following: All orchids are not "air plants" so called. Our native species, without exception, grow in the ground, although many of those which flourish in the tropics, and which are cultivated in temperate countries under glass, receive their nourishment from the moisture in the air. Plants of the orchid family differ from all others in the arrangement of their organs of reproduction, which are united into a column composed of a single or, in case of the Lady's Slipper, of two stamens coherent with or borne on the style or thick fleshy stigma. The perianth of the flower is composed of six divisions, arranged in two sets, each of three. The three outer divisions are called sepals, and often resemble in texture and color those of the inner set called petals.

Of the inner set of these divisions one differs from the others in shape and direction, and is called the lip—the sack of the Lady's Slipper. This is really the upper petal—that is, the one next to the axis of the flower—but by a half twist of the ovary it is made to appear as if it were the lowest. These elements—sepals, petals, lip and column—varied almost without limit in form and color, combine to produce the almost infinite number of widely differing forms which are so fascinating in their oddity, quaintness and beauty. Orchids are found in all warm and temperate parts of the world, although they are more abundant in the tropics than elsewhere. They are perennial plants, often with tuber bearing roots, and the peculiar structure of their flowers renders impossible their unaided fertilization, for which they depend on the visits of insects.

Hardy Herbaceous Plants.

In an essay on "Hardy Herbaceous Plants" Mr. J. W. Manning, of Reading, Miss., had the following to say at a meeting of florists:

Among double white flowers adapted to the flower garden and also for cutting we know of none better than the double white Achillea, the pearl, which in the hot weeks of July starts into a most continuous succession, continuing for fully six weeks. Gypsophilla paniculata or infants' breath is one of the indispensable flowers for all gardens, and could not be omitted from any list, and immediately following its best beauty, the Euphorbia corollata or flowering spurge commences to attain its beauty, and until the 1st of September will continue in profuse bloom. It is one of those plants which can invariably be depended upon.

Veronica longifolia var. subsessilis is in our opinion the finest dark blue flower that could be recommended. Commencing at this season it generally continues to bloom until late September. Its branching, upright habit of growth especially adapts it for cutting, and its intense color is unequaled. Pyrethrum Uliginosum is in its way fully as desirable as the last mentioned, covering about the same season of growth and producing an abundance of handsome, pure white, cup shaped flowers with yellow centers.

Things That Are Told.

Popular Gardening says that for the red spider the best antidote is water—this, and nothing more.

A well known florist tells that white sweet scented violets do well for quite a number of years planted where there are apt to be bad places in the sod, and will always thrive if the grass does not crowd them too closely.

A correspondent in Orchard and Garden says that some of the improved strains of the Lilliputian Zinnias are very beautiful. Many of the flowers are scarcely larger than a twenty-five cent piece, and faultless in form. The colors are already about as numerous as in the large [illegible]ds.

The Water Hyacinth, an Aquatic Plant That Is Still Unknown to the Majority of the People, Although Florists Are Well Acquainted with It.

The illustration represents an aquatic plant that is still so new as to be absolutely unknown to the majority of the people, although florists have it for sale. It is the Pontederia crassipes, major, also called the water hyacinth. It bears a cluster of pale lilac flowers, that re-

THE WATER HYACINTH.

mind one of a truss of rhododendrons. The individual flowers are about two inches in diameter, the top petal being blue in the middle, with a yellow spot in the center of the blue. But although the flowers are beautiful, it is the queer bladderlike expansion of the petioles that rivets the attention of those that see it for the first time. A Philadelphia correspondent, who describes this curious plant, writes as follows concerning it in the American Garden:

I have a specimen in a fish globe, and although the latter is filled with well water and contains not a particle of earth, the plant seems to thrive, for it has not only bloomed as you see it in the drawing, but it has thrown out two new runners since I had it; and to all appearances it is going to get along without any earth. This makes it the more attractive, since even the roots are beautiful. They are of a dark purplish black, tipped with a black lancelike point. I am told the plant is very tender, and therefore it must be kept in a warm room in winter.

Horticultural Don'ts.

Farm Journal gives expression to the following don'ts:

Don't plant in wet soil.
Don't buy large trees.
Don't buy slender trees.
Don't plant lousey trees.
Don't plant a tree without good roots.
Don't let Pat skin the trees with the swingle trees.
Don't use horses in the orchard without nose nets on.
Don't ripen the grain in the orchard.
Don't let a tree agent shut up your eye on wonderful varieties, and
Don't let anybody plant your trees; do it yourself.

The Peach Tree Borer.

Dr. Lintner, in remarks made before the Ulster County (N. Y.) Farmers' institute, said:

The best remedy is a solution made of soft soap and carbolic acid dissolved in water, with which wash the trees. One gallon of soft soap and one-half pint of crude carbolic acid, dissolved in two gallons of water, is the formula. The egg is usually deposited near the ground. A newspaper wrapped about the tree is also a preventive, but the wash is the more effective.

Peach-Cherry Hybrids.

The pollination of the cherry blossom with peach pollen was successfully performed at the Ohio State university, and several fruits reached maturity. Pollen of the plum was also applied to the cherry blossom and fruit obtained. The pits have been saved, and will be grown if possible, and much interest attaches to the possible result.

BREEDERS' CARDS.

Under this heading cards will be inserted at the following very low rates: 30 cents per line for six months; 50 cents per line for a whole year. Single insertions 8 cents per line.

Express Pre-Paid
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using "Anti-Corpulene Pills" lose 15 lbs. a month. They cause no sickness, contain no poison and never fail. Sold by Druggists everywhere or sent by mail. Particulars (sealed) 4c. WILCOX SPECIFIC CO., Phila., Pa.
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REARING SPRING LAMBS.

EXPERIENCE OF A MAN WHO COINS THE WORD "LAMBERY."

One Breeder Who Has Succeeded Well with Spring Lambs—He Speaks Strongly in Favor of the Vigor and Reliability of the Horned Dorset Breed.

J. S. Woodward, of Niagara county, N. Y., furnishes to The Rural New Yorker the following useful information in regard to rearing spring lambs:

If the place where we raise pigs is a "piggery," why not call the place where we raise early lambs a "lambery?" I am in favor of it. Well, we have commenced operations in our lambery this year, not earlier than ever before, but on a more extensive scale for so early a date. On Oct. 18 we had no young lambs, but when I was home the day before election—Nov. 3—we had sixty-six, which made an average of a little over four a day, and they were then coming lively. This is a much better success than we had ever had before.

One early lamb is worth two late ones, and we have given days to the investigation of the best way to produce them, trying to discover some sure way of obtaining success every time. Sometimes we have thought we had solved the problem, and then, the very next year, have found we were as far off as ever. We used to think that it would not do to keep ewes for this purpose more than one year; that the forcing process was such a strain upon the system that they would "play out:" but we have changed our minds.

A ewe that raises an early lamb this year is much more likely to have one next, and will do better by it than a fresh ewe, and so we have taken to sorting out all our best mother ewes and keeping them over. The idea that ewes cannot stand the close housing and high feeding necessary to produce the best results more than a single year is a humbug, and we now keep them three or even four years at the business. We look upon this as one cause for our great "luck" this year.

The best breeds for sires is a matter of very great importance. We have tested nearly all the breeds for this purpose, and up to three years ago were fully convinced that the Hampshire was superior to all others, although we still tried each year in a small way the other black faced breeds. Four years ago we imported a few Dorset Horned, but they arrived too late to be used that year. The next year we used one of the rams to a limited extent, and were much pleased with the crosses produced. The lambs came strong, were robust, lively and grew very rapidly.

The rams have so much prepotency that one can hardly tell half bloods from a Dorset sire from full bloods, and as a matter of course the lambs all have large horns. When the first were sent to market our agent wrote, "Those tremendous horns are a very great objection, and you had better put the lambs into some other market;" but within an hour of the time when the letter was received a telegram came, saying, "The parties who had the horned lambs want more; send them right along." That was the last objection that was ever raised to them, and now the bigger the horns the better do the lambs sell. They are a sort of trademark.

The next year—in 1889—we used several Dorsets. As as an experiment, with one flock of a little over 100 ewes, we put one ram of each of the Shropshire, Hampshire and Dorset breeds. When the lambs came more than half were Dorset crosses, and there were twice as many Dorset twins as of both the others. The Dorset crosses grew more rapidly than the others, and went to market when from a week to ten days younger than either of the others, and sold for better prices. More than this, all, or nearly all, the very earliest lambs were Dorset crosses. We then decided to use this year nearly all Dorset sires, and have done so, having only used Shropshires and Hampshires in an experimental way.

Although the rams of each of the three breeds were put with the ewes at the same date, of all the lambs dropped up to Nov. 3 only three were of the black faced parentage. While it is doubtful if the breed is the only factor in getting very early lambs, there is no doubt it has very much to do with the matter. I do not wish to boom the Dorsets, and have not done so, as all must know, for although we have had them now for over four years, this is the first time I have ever written a word in their praise, and almost the first time I have mentioned them, and all I have to say now is that, having tested them fully for four years for early lamb getting, I have not found them wanting.

Bee and Honey Notes.

Bar hives are hives with bars across the top to which the combs are attached.

Bees do not make honey, but gather it from the flowers.

The better way to start in the bee business is to begin in a small way and gradually grow into it.

Every apiarist should aim to keep his place, his extractor, and receptacles neat and clean.

Hasty thinks 3 pounds or less of honey will make 1 pound of wax; Simmins less than 6½ pounds; tradition, 20 pounds. "Don't we stick to that 20 from mere habit?" asks Dr. Miller in Gleanings. "I do. Has there been a single experiment of late years to confirm it?"

The parent colony is the colony from which a swarm has issued.

Points of Interest.

Salt all your live stock at least once a week. Milk cows ought to have large pieces of rock salt near their watering troughs, where they can lick it when they feel like it.

In Europe it is the general impression that sheep cannot be raised unless root crops, such as turnips, carrots, etc., are cultivated for them. But in this country of high priced work and labor saving devices, it has been found that sheep thrive quite as well on ensilage, thus avoiding the back breaking and expensive task of cultivating and digging turnips.

The Arkansas valley is becoming a great hog country. It possesses unrivalled advantages of climate, and is admirably adapted in other respects to the swine industry.

More and more breeders are falling into the habit of dehorning cattle. One who once adopts the practice rarely allows horns to grow again. Dehorning is not greatly painful to the animal if done in the right way when the calf is young, when the horns are no more than mere protuberances. Searing the budding horn knobs with a hot iron is one of the methods adopted.

A small flock of hens (ten to twenty-five) can be kept laying steadily through the winter by giving them warm quarters, scraps of fresh meat, grain and a variety of food, being careful that they do not get too fat. And in these small flocks lies much profit to the farmer's wife and daughters.

ORCHARD AND GARDEN.

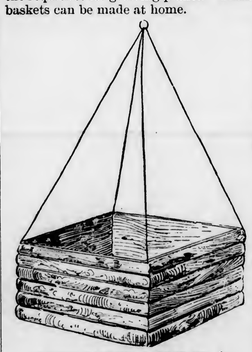
USEFUL AND ORNAMENTAL GARDENING FOR COUNTRY HOMES.

How to Insure Vigorous Growing Plants in Hanging Baskets—Two Rustic Baskets Illustrated and Directions Given for Making and Filling Them.

Lilies in Garden Decoration.

Lilies constitute a class of bulbs decidedly important in garden decoration. Select a well drained spot of ground, enrich it with well decomposed manure, and plant the bulbs from five to ten inches deep, according to their size. Do not disturb the bulbs after planting, but keep the top soil sufficiently stirred to prevent weeds from growing. Plant as early as the ground can be worked. Among the hardy lilies the Auratum or golden banded lily is the grandest. Other fine varieties are the Brounii, Coridion, Dalmaticum and the Humboldtii.

Hanging baskets are often a failure where they do not afford the proper conditions for a thrifty growth of plants. Some are too shallow, others are devoid of means for proper drainage, etc. Country Gentleman calls attention to the baskets illustrated, as being not only attractive in appearance but furnishing the requisites for growing plants. These baskets can be made at home.



RUSTIC HANGING BASKET NO. 1.

The first was made of a box ten inches square and seven inches deep. A sufficient number of heavy, rounded pieces of bark, the rougher and more irregular the better, to cover the outside of the box, were selected and trimmed to fit. They were neatly tacked on with small brads. Strong wires were fastened to each corner and the ends gathered into a ring.

The other basket had for a foundation a small wooden tub some twelve inches in diameter and eight deep. The ornamental staves were whittled out of stained shingles, and the tacks that held them in place concealed by two hoops made out of grapevine. Three wires were fastened to the top at equal distances apart and secured to a ring, as in the other basket.

Plants of a trailing or branching growth should be selected for basket culture, and the success of these by the observance of a few simple rules is sure. The authority quoted advises a basket that holds sufficient soil; plants to suit the situation in which it is to be placed; where more than one variety is planted in the same basket, to select those which require the same amount of water and sunshine, and that the earth is never permitted to become perfectly dry.

RUSTIC HANGING BASKET NO. 2.

The Japanese climbing fern, the sword fern, combined with the club mosses, are good plants for baskets in shady places. Other plants that grow well with but little sun are the German and Kenilworth ivies, also certain begonias. When the last named are used it is well to plant some drooping vine around the edge of the basket. Nasturtiums grow well and make a beautiful basket. Every one knows the virtues of Tradescantia. Othonna is pretty and Thunbergia is fine for baskets. In the basket shown in the second cut, and designed to hang in a sunny place, Maurandya was planted to climb up the wires, sweet alyssum and oxalis in the center. Before the close of the summer the alyssum almost concealed the sides of the tub.

Practical Points in Tomato Culture.

The essential general points in profitable tomato culture are these:

Careful selection and breeding, early sowing, frequent or at least occasional transplanting to obtain stocky plants, rich soil, well prepared and tilled.

There is evidence that varieties of tomatoes run out even under good culture.

The best market tomatoes appear, from tests, to be Ignotum, Favorite, Bay State, Atlantic, and perhaps Ruby, among the red varieties; Beauty, Mikado, and possibly Potato Leaf, among the pink or purple varieties: Golden Queen among the yellow sorts.

Among the novelties Ruby and Chemin Market are named as the most promising.

Very heavy manuring does not lessen productiveness.

Neither nitrate of soda nor muriate of potash alone is a profitable tomato manure upon thin soil.—Cornell Station.

A Tree Tomato.

If you want a tree tomato, says Rural New Yorker, set out in rich soil and at the base of a pole or other upright support a single plant of any of the strong growing varieties, such as Ignotum, Perfection, Potato Leaf or Long Keeper, and as it grows pinch out every lateral bud and secure the main vine to the support. Before frost the vine will have grown ten or twelve feet. A more rapid growth may be secured by picking off the flowers as they bloom. There is no variety which more than another is entitled to the name of "Tree Tomato."

Some Good Peas.

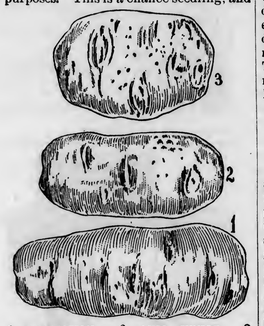
For first early we have found Tate's Nonpareil, Early Victor and Eclipse the earliest. But for family use we prefer to start with the Alpha and McLean's Premium Gem and follow with Yorkshire Hero, Blue Imperial and Champion of England. The first three sorts named are the earliest market peas we know, and are largely used by the truck farmers about Norfolk and in eastern North Carolina.—Orchard and Garden.

FARM AND GARDEN.

OBSERVATIONS WORTHY OF NOTE IN RURAL AFFAIRS.

Vick's Three Favorite Potatoes, the Champion, Perfection and Ohio Junior. Their Leading Features Described with Illustrations Showing Their Shapes.

Tuber 1 in the accompanying cut represents in greatly reduced size the new potato, Perfection, which Vick claims is one of the best for general purposes. This is a chance seedling, and



1. PERFECTION. 2. OHIO JUNIOR. 3. CHAMPION.

the claims made for it are productiveness, fine appearance and good cooking qualities. The tubers grow compact in the hill, and are large and uniform in size, oblong, inclining to oval, but generally flattened; color white, with a tinge of pink around the eyes similar to the Hebron. The vine is of strong, vigorous growth, yet stocky and short jointed, maturing about the same time as White Star.

Fig. 2 in the same cut represents Ohio Junior, originated in 1881. This, although a chance seedling, is without doubt in some way related to that good old sort, the Early Ohio, as it is almost identical with that variety in the form and marking of the tubers, habit of growth, etc. The tubers are oval oblong, round at the seed end, with full eyes, that are almost even with the surface. It is an excellent keeper, productive, of fine quality and has proved to be a valuable addition to the list of extra early varieties.

No. 3 in the cut shows the Champion, a new seedling potato of promise. Vick claims that the Champion is one of the most productive varieties ever offered and that it is a good keeper of excellent quality. The tubers are large and white and covered with a light russet coating. The eyes are large, full and near the surface. The tubers are similar in size to the Green Mountain, but more oval and full at the seed end.

How to Cure Bacon.

Few farmers know much of bacon. They are acquainted with pork, but never took the trouble to prepare any bacon. Philadelphia Farm Journal lays out the following easy plan: Cut the sides of the pig into strips four to five inches wide and salt with this pickle: For 100 pounds of bacon make a brine with six pounds of salt, four ounces of saltpeter and one pound of brown sugar. Cover the meat and keep it in the brine six weeks and then give it a light smoking. Sew the pieces in cotton cloth bags and paint them with lime and ocher mixed in water.

HOW DEEP TO PLANT POTATOES.

Answers Gained by Some Very Interesting Experiments.

While no one depth can be named as best in all soils, it is a fact that the old method of rather shallow planting and hilling up around the growing plants has, by many potato growers, been superceded by deep planting and comparatively level culture. In 1888, on The Rural New Yorker's experiment grounds, three out of five rows of a small plot were by high culture and fertilizing made to produce at the rate of 1,076, 683 and 605 bushels to the acre, respectively. The seed was planted in trenches 8 inches deep and 12 inches wide. No one has experimented more on the subject of deep or shallow planting than Mr. Carman, who conducted these experiments. The following are given as the average results for three seasons' trial on The Rural grounds on a different soil.

At 2 inches deep, 245 bushels per acre.
At 4 inches deep, 289 bushels per acre.
At 6 inches deep, 233 bushels per acre.
At 8 inches deep, 257 bushels per acre.
At 10 inches deep, 240 bushels per acre.

The soil was naturally poor and thin and had never received any manure. For the three trials mentioned Mapes' potato fertilizer was used each year at the rate of 1,000 pounds to the acre. As seen above, the fourteen inch trenches give the largest yield as the average of three years' experiments on this kind of land. As reported by The American Agriculturalist, the late Alfred Rose, of Penn Yan., N. Y., raised in 1839 1,039 bushels as a single season's crop from two separate plantings on the same acre. Trenches eight inches deep were graded to an even depth of six inches. The seed was dropped in the bottom of these trenches and covered with two inches of soil. As the plants grow the soil is gradually filled in. Other experiments with large results from similar modes of culture, including the great crop of Mr. C. B. Coy of 738 bushels from a single planting, on one acre, might be mentioned.

Lime as a Fertilizer and Insecticide.

In a paper read before the Society for the Promotion of Agricultural Science J. B. Smith had the following to say about lime:

Lime is in general use as a fertilizer, and to a limited extent also as an insecticide. Testimony as to its value is conflicting, and this I am convinced is due to the condition when applied. Lime used as an insecticide ought to be in the form of a dry hydrate. To shell or stone lime just enough water is to be added to slake; then sift through a moderately fine seive, and dust on the insects when they are wet. Only soft bodied insects can be reached by this substance, and the application must be so made that the caustic properties of the lime may have a chance. The larvæ of the potato beetle and asparagus beetle are good subjects, and testimony of its effectiveness on the cabbage worm is not wanting.

Top Grafting Apple Trees.

A correspondent of The New York World says: So far as my observation extends, or I have had any experience, I have an unfavorable opinion of the practice we sometimes see recommended of top grafting apple trees of poor varieties with scions from better sorts. If a person has two or three trees standing in a place where he wants them to continue, and is unwilling to wait for young trees to supply their places, he may change the character of most of their fruit in this way. So far as profit is concerned, I will in preference set out thrifty young trees of such kinds as I want, and wait for them to grow before I will climb into old trees and saw off limbs and graft into them ten or fifteen feet from the ground to get different kind of an apple.

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An Illustrated
Agricultural, Horticultural and Household Journal.
PUBLISHED MONTHLY
BY
The Farm and Vineyard Publishing Co.
ERIE, PA.

H. TONG, ... Editor and Manager.

TERMS.

Single subscribers 50c. per year, 25c. for six months. Two copies for one year 90c., Three copies $1.20. Four copies $1.50, Five copies $2.00, and a copy free to the person getting up the club. Ten or more copies 25c. each per year. All subscriptions payable in advance. No receipt will be sent for subscription unless requested. The fact that you receive the paper is proof that we have received your remittance correctly. If you do not receive the paper promptly, write us that we may see that your address is correct. If subscribers change their address, the old as well as the new address must be given.

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Ordinary display, ten cents per line, (agate) Reading Notices, fifteen cents per line, (agate) Liberal discount for large space or long time ads.

No humbug advertised at any price.

ERIE, PA., MAY, 1891.

Number 1. Volume V.

The FARM AND VINEYARD is now in its fifth year of success, and our aim is to make the fifth volume the best ever offered to our horticultural and agricultural friends. We are still taking subscriptions at 25 cents a year, but shall soon go back to our regular rate, 50 cents per year.

The Erie Chrysanthemum Club.

A large and enthusiastic meeting of the club was held on Saturday, the 2d inst., at the offices of the President, Dr. B. D. Schlaudecker, when it was decided to hold the annual show on the 5th, 6th and 7th of November next, a committee being appointed to procure a suitable building for that purpose.

The President, in a few well chosen remarks, spoke of the hitherto lukewarm interest some of the members had taken in the affairs of the club, and urged all present, especially the florists, to put their shoulders to the wheel and make the forthcoming show the best ever held by this club.

A sub committee was elected for the purpose of preparing a premium list for the coming show. The advisability of offering premiums for fruit, vegetables and other garden products, was discussed at some length, and if a suitable building can be procured most likely fruits, if not vegetables, will be included in the premium list, and liberal premiums offered. But a great deal depends on the growers themselves. All should become interested, and should join the club at once, as the object of the club is to promote not only the better cultivation of the chrysanthemum, the beautiful queen of autumn, but to advance the cause of horticulture generally. The annual dues, entitling the members to all the privileges of the club, including admission to the shows, is only one dollar. The next general meeting of the club will be held at the same place on Saturday evening, June 6, when all members are requested to attend.

Catalogues Received

We have just received a handsome, illustrated catalogue from P. C. Lewis, of Catskill, N. Y., entitled, "Will It Pay to Spray Fruit Trees." It gives reports of the experiments of many of the leading entomologists and large fruit growers in fighting insect pests, leaf blight, grape rot, etc. This catalogue is full of valuable information on this important work, and will be sent free on application. We would advise any of our readers interested in fruit growing to write for it, addressing Mr. Lewis as above. We also acknowledge receipt from the same party of the illustrated book entitled, "Our Insect Foes and How to Destroy Them." This book is profusely illustrated and gives the latest and best receipts and manner of fighting our insect foes, and is a book that should be in the hands of every fruit grower. Mr. Lewis, who is a manufacturer of spraying outfits, gives one of these valuable, illustrated books to each purchaser of one of his spraying outfits.

The World's Fair.

The most inventive minds in all parts of the world seem to be at work to produce wonderful and startling novelties for the great World's Fair. Many of them are described in *The Western World*, published at Chicago, and all will be represented in that paper as soon as cuts can be made.

As many of our readers are more or less interested in World's Fair news at the present time, we have made arrangements by which we can supply *The Western World* and FARM AND VINEYARD, both one whole year for only 40 cents.

If you have anything for sale advertise in the FARM AND VINEYARD. We guarantee good results, provided you offer the right articles. Many of our readers write and inquire where they can purchase full blooded cattle, poultry, pigeons, dogs, sheep, pips, etc., hence our offer to insert breeders' cards at the low rate offered on page 5.

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On treatment and care of domestic animals, horses, cattle, sheep, dogs, hogs and poultry, sent free. Address, Humphreys' Veterinary Specifics, corner William and John streets, New York.

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DEPARTMENT OF AGRICULTURE.

How to Grow and Handle the Potato Crop.

For the FARM AND VINEYARD.

BY ALBERT H. RHODES.

There is a diversity of opinion on when to plant the potato, how to plant it, how to handle it while growing and how to harvest it and market it. I shall not contest any man's opinion, but simply give my own, as I have imbibed them by my past experience. First, then, as to planting them: Plant whole seed of a medium size, or if large, cut them once by splitting them lengthwise. Never plant small ones when other seed can be had. Put two potatoes to the hill, about 2½ feet apart in the row; rows 3 feet apart. Plant early in April if weather and ground will permit. I have found by a long experience that potatoes set better and are more apt to yield well and be healthy tubers when planted early. Last season I planted eight different kinds, and those I planted in April were altogether the best. The Late Hebrons, or White Elephants as some call them, are about the best yielders, at present, in this locality; but my choice variety is the Snowflake. They have yielded as well and are as healthy as any, while being first quality when on the table. The Colorado Reds are claimed to be a popular variety in Crawford county, while the Burbank Seedling is still held to be an excellent variety for late keeping. The Strawberry, a round, red variety, is the earliest variety I am acquainted with, but as most every farmer has his choice of varieties, it is a question for each to decide for himself. Having planted your potatoes have a slanting tooth harrow and give them a good harrowing just as they are breaking cover, then when they are four inches or so in height cultivate them with a one-horse cultivator. Watch them carefully that bugs do not get the start of you and eat them up before they set. Give them a good hoeing when they have their growth or nearly so, as otherwise the sun will get at your tubers and spoil them for eating. When ripe dig them, picking them up as fast as they are dug, as the sun will ruin them if they are allowed to lay exposed to the sun a few hours. Many think this nonsense but my experience is otherwise. A neighbor dug his potatoes out this fall and let them lay a week on the ground, claiming it would not hurt them. But every man for his notion; I have mine, and it is that potatoes should be picked up immediately and covered from the sun, and put in a cool place every evening when one is through digging. A dry, cool cellar, made as dark as possible, is the best place for the potato. If potatoes will bring anything like a fair price in the fall, sell them; if not, house them well and sell in spring as early as you can.

The beautiful pictures, Christ before Pilate and Christ on Calvary, are still offered. Either picture and a year's subscription to this paper, for only 50 cents.

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Our Sewing Machine Offer.

We have made arrangements by which our subscribers, only, can purchase one of the above sewing machines for the small sum of $18.00. This is one of the most approved styles of lock stich sewing machines, and is sold in different parts of the country at from $40 to $60. These machines are well made and handsomely finished with black walnut furniture, as shown above, and each machine contains a full set of the latest improved attachments, instruction book and the manufacturers guarantee for five years.

Special Clubbing Offer.

If you wish to take any other paper or magazine in combination with FARM AND VINEYARD, it will pay you to write to us and get our prices. We have secured special rates for subscribers of FARM AND VINEYARD, which, if taken advantage of, will allow you, in most cases, to get two papers for the price of one.

The following are a few of the leading papers and magazines. A complete list will follow:

		Farm and Vineyard.	Our Price for Both.
The Rural New Yorker, price	$2.00	$ .50	$1.90
" American Garden, "	2.00	.50	1.90
" Farm Journal, "	.50	.50	.50
" Chicago Weekly Times "	1.00	.50	1.00
" American Rural Home "	1.00	.50	1.00
" Amer. Sheep Breeder, "	1.00	.50	.90
" Cleveland Leader, "	1.00	.50	1.00
" Yankee Blade, "	1.00	.50	1.00
" Fanciers Review, "	.35	.50	.50
" Buffalo Weekly Express "	1.00	.50	1.00
" " Sunday " "	2.00	.50	1.75
" Farmers Record, "	1.00	.50	.80
Devoted to Farmers' Organizations and Farm Topics.			
" N. Y. Weekly World, "	1.00	.50	1.00
" Cosmopolitan, "	2.40	.50	2.00
" Ladies Home Companion "	.50	.50	.65
" Western Garden, "	.50	.50	.50
Our Country Home, "	.50	.50	.50

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FOR LIVE STOCKMEN.

SOME MORE DISCUSSION ABOUT THE BEST FARM HORSE.

Good Illustration of a Suffolk Punch Stallion—Favorite Farm Horse in the Eastern Counties of England—Easily Kept and Lasts a Long Time.

Authorities differ. William Crozier, in his excellent work on farming, says that the Clydesdale is par excellence the horse for the farmer, while the Suffolk Punch makes the best possible draft horse for city work, being capable of hauling immense loads. He pronounces the Suffolk too slow, however, for farm work in America.

A writer in The American Agriculturist, however, says that the Suffolk Punch is just the spry, easily kept beast that is wanted for farm use, and that the English Shire horse, or truck horse, is the one exactly adapted for heavy city hauling. It is certain that the Clydes and Percherons are as yet more popular as draft and farm horses than either the Shire or Suffolk Punch. The illustration shows an excellent type of an imported Suffolk Punch.

SUFFOLK PUNCH STALLION.

The Suffolk is the farm horse of the counties of eastern England. The writer in The Agriculturist says:

The Suffolk horse of the present day retains many of the leading features of the breed the description of which is extant as he appeared at the close of the Seventeenth century. Reference is made to what he was like 190 years ago in the writings of some of the standard authors on British agriculture. The color, the short legs, the powers of endurance and the persevering efforts at the collar were his distinguishing points at that time, and these are still a marked characteristic in the Suffolk as he is now to be found in the east of England. But added to the merits named he has been endowed with an activity and comely appearance not accorded to the original stock.

The Suffolk horse of the Nineteenth century is among the most shapely and certainly one of the handsomest animals on the farm list. Invariably of a chestnut color, occasionally with a darker shade, and rarely whited beyond the pastern joint or a blaze down the face, their uniformity in appearance at once suggests the identity of origin. Indeed, the pedigree charts which are given in the first volume of The Suffolk Stud Book account for this. Every stallion of the breed in Suffolk can give his genealogical record of identified paternal ancestry for 130 years, all ending in one animal. Of no other breed can such a thing be said and proved.

The usual height of a full aged Suffolk stallion is about 16½ hands—from 65 to 67 inches. In weight he would generally come to about a ton—from 1,900 to 2,300 pounds. His head is mostly light, with a lively countenance and a handsomely arched crest not unduly weighted. His shoulders are long and his middle well arched, with deep ribs and heavy quarters. His bones give one the idea of not being sufficient for his immense width of carcass; but that is accounted for by the lack of hair, for the bone of a well built Suffolk, stripped of skin and what in other breeds is sometimes beneath it, is invariably larger than it appears. They live and flourish on rations that would reduce the large dray horse to a skeleton, and at an age when other breeds are worn out the Suffolk is usually a hale and hearty servant, good for many a year at farm work.

Mutton Production.

The introduction of mutton sheep into the United States goes bravely on. Forty-one Hampshire Downs were at New York lately. They came from England, and will be sent to Mercer county, Pa., for breeding purposes. Still more important is the report which came to us from Montana that leading sheep men in that territory are seriously thinking of organizing a movement to acquire abandoned farms in New England, and introduce mutton sheep husbandry there upon a large scale.—American Wool Reporter.

Wasting Hay.

Tons of hay are annually pawed under the horses' feet and go to waste. It is true there is a great difference in horses and the habits they form. Some will eat from almost any kind of a box and waste little, while with others nothing is suitable except a manger boxed on the stall side with a hole only large enough to admit the horse's head when eating. Even then, if there is a rack behind the box through which the horse must pull the hay, it is all the better.—Nor'west Farmer.

Marks of a Good Hen.

A good hen should have a small head, bright eyes, a tapering neck, full breast, straight back, full, ovoidal shaped body, medium length of gray colored legs, broad rump and red comb. Color of feathers is of but little matter, but yellow legged fowls are said to have coarser flesh, though yellow legs and skin look richer and sell better than clay colored. A fat hen has plump breast and rump, and fat under the wings.—Exchange.

An experienced herder says that whenever a sheep goes off by itself its owner may be sure there is something radically wrong with it.

GRAND PREMIUM OFFER!

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WORKS OF CHARLES DICKENS,

In Twelve Large Volumes,

Which we Offer with a Year's Subscription to this Paper for a Trifle More than Our Regular Subscription Price.

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Wishing to largely increase the circulation of this paper during the next six months, we have made arrangements with a New York publishing house whereby we are enabled to offer as a premium to our subscribers a **Set of the Works of Charles Dickens, in Twelve Large and Handsome Volumes,** with a year's subscription to this paper, for a trifle more than our regular subscription price. Our great offer to subscribers eclipses any ever heretofore made. Charles Dickens was the greatest novelist who ever lived. No author before or since his time has won the fame that he achieved, and his works are even more popular to-day than during his lifetime. They abound in wit, humor, pathos, masterly delineation of character, vivid descriptions of places and incidents, thrilling and skillfully wrought plots. Each book is intensely interesting. No home should be without a set of these great and remarkable works. Not to have read them is to be far behind the age in which we live. The set of Dickens' works which we offer as a premium to our subscribers is handsomely printed from entirely new plates, with new type. The twelve volumes contain the following world-famous works, each one of which is published *complete, unchanged, and absolutely unabridged:*

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The above are without question the most famous novels that were ever written. For a quarter of a century they have been celebrated in every nook and corner of the civilized world. Yet there are thousands of homes in America not yet supplied with a set of Dickens, the usual high cost of the books preventing people in moderate circumstances from enjoying this luxury. But now, owing to the use of modern improved printing, folding and stitching machinery, the extremely low price of white paper, and the great competition in the book trade, we are enabled to offer to our subscribers and readers a set of Dickens' works at a price which all can afford to pay. Every home in the land may now be supplied with a set of the great author's works.

This entire set of **TWELVE VOLUMES** are now offered by us for **One Dollar only**, including a **Year's Subscription to FARM AND VINEYARD**, or given **FREE** with 3 subscribers at 50 cents each, and to every person getting up a club of 10 subscribers at our clubbing rates of 25 cents each, we will **Present the whole Set of Twelve Volumes FREE.** Address,

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THE ADAMS

FIVE WHEEL TRUCK!

The above cut represents a very strong and convenient **Truck or Five Wheeled Carrier.** The middle, or centre wheel is larger than the end wheels, and thus forms a pivot, allowing the load to be turned with great ease and **moved in any direction desired.** It is capable of sustaining **One Thousand Pounds Weight,** and is very valuable for use in **Stores, Storerooms, Freight Depots, Etc.**

Farmers will find it to be just what they want for use in the barn for moving bags of grain, etc. It is only about four inches high, hence it is very easy to tip a heavy box or case over onto it or off it, doing away with all heavy lifting. Thousands of these little labor savers are being sold, and no merchant can afford to do without one or more of them about the store.

Regular price, $1.25. Sold by us for $1.00, including a year's subscription to Farm and Vineyard.

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A one-half ream of 8x11 FREE to dairymen and others who will pay express and use it. If sent by mail, send 30 cts. for postage.

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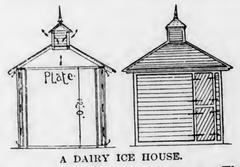
INFORMATION OF PRACTICAL IMPORTANCE TO RURAL READERS.

The Ground Plan, Elevation and Side View of an Ice House of Sufficient Capacity for a Large Farm Dairy and Household and Farm Use.

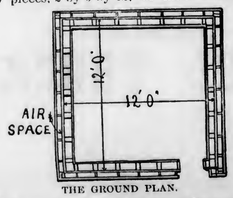
The capacity of the house is 12 by 12 by 12 feet. This will hold over 100 tons of ice, or over half a ton per day for six months in the year. The soil upon which the house stands, if not porous should be well drained by means of a foot of gravel, rock or other suitable material,



A DAIRY ICE HOUSE.

with a drain leading away from it. The specifications are as follows: Sills are to be 2 by 12, bedded level on the ground; the inner studs, 2 by 6, sheathed on both sides with common boards, the outside to be covered with felt paper, the space formed by sheathing to be filled with tan bark or sawdust. The outer studding to be 2 by 4, spiked to outside sheathing and covered with common siding, leaving a space under frieze and above base of three inches. The floor to be constructed by spreading from four to six inches of tan bark or sawdust; level the same and cover with common boards, leaving a three-quarter inch space between each. The plates to be the same as studs, 2 by 12; rafters, 2 by 4; roof shingled. Ventilators in top should be 2 feet 6 inches square. Doors doubled and filled with sawdust.

The bill for lumber is as follows: Eight pieces, 2 by 12 by 14, for sills and plates; 30 pieces, 2 by 6 by 12, for inner studs:



THE GROUND PLAN.

5 pieces, 2 by 6 by 12, for hip rafters and collar beams; 38 pieces, 2 by 4 by 12, for outer studs; 20 pieces, 2 by 4 by 12, for rafters and ventilator; 750 feet siding, 14 feet long.

Two thousand feet common boards, for sheathing, floor, roof, etc.; 24 pieces fencing, surfaced, 12 feet long, for corner boards, etc.; 80 yards building paper; 3,000 common shingles.

Our Agricultural Exports.

According to a report of the statistician of the department of agriculture, about one-tenth of our agricultural products is exported. The sum is, however, made up from a very few articles. These are cotton, tobacco, meats, breadstuffs and cheese. Seven-tenths of the cotton product goes to foreign markets. All other articles, except those above stated, when put together are but 3 per cent. of the exports. The exportation of tobacco is not increasing materially or so rapidly as home consumption. More cheese could be sold if its reputation for quality should be kept up and there were more disposition to cater to fastidious or peculiar foreign tastes. Butter exports could be made larger if they were of better quality. Our great American crop—corn—is chiefly consumed on the spot, not more than one-sixth, it is said, going beyond the boundary of the county in which it is grown, and only 2 to 3 per cent. being now exported. Nearly two-thirds of this crop is produced in seven states—Ohio, Indiana, Illinois, Iowa, Missouri, Kansas and Nebraska, few others producing more than is required at home, and the larger portion having a deficiency to be supplied by those seven states.

Are Incubators Profitable?

Are incubators profitable? The answer to this much vexed question remains the same as last year—namely, yes and no. Under favorable conditions—such as a superior machine, good eggs, and an intelligent and above all patient management—incubators have been made profitable; otherwise there is more money in the hen. Mr. George Q. Dow is one of the authorities on poultry matters who think the artificial incubators are not profitable. J. K. Fleck is another stern defender of the hen and skeptical concerning incubators and incubated chicks. An authority in The Fanciers' Journal gets at the real issue in the remark that there is really more in the proper rearing of the incubator chicks after they are hatched than in the hatching. He says: "We hatch chickens by both hen and incubator, and reiterate the statement that artificially hatched and reared chickens will lay as well, feel as well and score as well as those raised by nature's methods."

Renewing Seed.

There is no question about the wisdom of renewing seed, and especially small grains, from a distance. Grain that has been repeatedly sown in the same vicinity will "run out"—that is, have a gradually weaker vitality, and to resist these adverse conditions we must renew the life of the seed. Renewals from the same county or the same parallel of latitude are not sufficient, but the new seed should be brought from a locality that has essentially different climatic conditions. The general principle, according to Field and Farm, is that we should work from the north toward the south in these renewals, but this rule, of course, has its limitations from natural causes. With wheat and oats the same seed should not be used for more than three successive seasons.

Oats Worthy of Trial.

Of the large number of varieties of oats tried at the Illinois agricultural experiment station, the so-called "rust proof" red or dun colored varieties from Texas gave the largest yield in 1890, but the smallest yield in 1889. Among the white varieties the Early Dakota and Pringle's Progress gave the largest yields. Of the black varieties Black Russian and New Dakota Gray stood first, with Black Highlander next in order.

A Word of Caution to Sheep Growers.

A writer for Field and Farm very truly says that one sheep can infect a thousand with scab or ticks as well as fifty or a hundred can. One sheep that gets over or through the fence without being treated for those pests may undo the whole work which cost a hundred dollars for labor and as much more for materials. If a single scab spot is left undipped it becomes at once a new center of infection. If the least atom of virus is left in the hoofs of a single sheep when their hoofs are pared and cauterized for foot rot it may poison the whole flock and negative everything that has been done

AMERICAN STALLION SHOW.

Important Action at a Meeting of Horse Breeders.

At a meeting of horse breeders in Chicago it was resolved to form an association to be known as the American Stallion show. Their objects are to improve the horses of the country, and to give annually an exhibition to be known as the American Stallion show. The first of these shows is to be given in the spring of 1891.

The association will also be directly interested in aiding to prepare a creditable live stock display at the World's fair in 1892. All horse breeders in good standing throughout the country are invited to become members of the association and aid it in all ways. Committees have been appointed to draft a constitution and bylaws for the new society, and the fee for certificate of membership was fixed at $10 each.

Applications for membership can be filed with either of the following gentlemen: S. D. Thompson, Chicago; Charles Burgess, Winona, Ills.; R. P. Stericker, Springfield, Ills.; J. Murray Hoag, Maquoketa, Ia.; A. Oltman, Watseka, Ills.; Charles F. Mills, Springfield, Ills.; Archie Galbraith, Janesville, Wis.; Charles E. Stubbs, Fairfield, Ia.; J. D. Conner, Wabash, Ind., and W. H. Goodpasture, Nashville, Tenn.

Following are the reasons set forth for the formation of the organization, together with some of the resolutions adopted:

Whereas, The profit in breeding horses largely depends upon the advantages enjoyed for selling stock at an advance over the cost of production, and

Whereas, The demand for stallions of approved breeding and individual excellence of the various breeds of horses largely exceeds the present supply, and

Whereas, The great majority of breeders of stallions lack the necessary facilities for meeting purchasers and making advantageous sales at the season when stallions are generally selected, and

Whereas, The development of the commercial industries and the rapid extension of the vast farming interest of this country will make a corresponding increase in the future demand for good horses; and

Whereas, The interests of breeders of stallions and parties desiring to purchase the same can be greatly promoted by the establishment of a spring stallion show that will bring such parties and the stock together at some accessible point, therefore be it

Resolved, That the breeders and importers of horses here assembled favor the establishment of an organization to be known as the American Stallion Show, and invite breeders of the recognized breeds of stock to become members of the association.

Resolved, That each of the associations engaged in the publication of stud books for the improved and distinct breeds of horses be requested to designate a representative breeder, making a specialty of the breeding of such stock, to serve on the advisory committee of the association.

Resolved, That the president and secretary of the Stud Book association referred to above should, in the opinion of the meeting, be appointed superintendent and clerk to take charge of and make full report relating to the exhibits of the breeds represented by their respective organizations.

Resolved, That the judges appointed to pass upon the various improved breeds of horses exhibited at the American Stallion Show should be selected by the official board of the respective Stud Book associations.

Points of Interest.

The question whether mutton sheep will improve in price next season is mixed. There is some prospect, however, that breeding sheep of the mutton build will be in active demand, since both in the north and southwest agriculturists are engaging more and more in sheep farming.

In grading up your flocks and herds always use a full blooded sire.

The tendency at present is to import fewer draft horses and better ones from Europe. In England, Scotland and France for the past few years it seems as if anything and everything has been considered good enough to send to America, so great was the demand for draft horses and so ignorant apparently were American breeders of the points of a really first class animal. Now, however, our breeders and importers have had their eyeteeth cut. They have imported this year fewer draft horses than last year, but the ones that came are of higher quality.

Here is a note for farmers and impecunious agriculturists to remember: The universal testimony of butchers and meat dealers is that the best beef in the market, that which commands the highest price, is the home fattened steer or heifer which the small farmer singles out from his few cattle and sells. The demand for meat is so great that of course the large herds shipped east by the car load are a necessity, but the sweetest and tenderest, that which commands the most money, comes from the little bunches of home grown beef, and don't forget it.

W. T. Woodard's second combination horse breeders' sale of the season will take place at Lexington, Ky., Feb. 16 to 25. All breeders of first class horses are allowed to bring their animals to this sale and dispose of them.

Some of the best sheep raisers begin to breed their ewes on Christmas day.

Of course nobody can tell much about it for certain, but the prospect is that better prices will be realized for cattle the latter part of the winter than was the case during the beginning of the season. There was a great rush of beef cattle to market in the fall from the west and northwest, because both corn and water were scarce. That rush being over, good prices for prime stock can hardly fail to be realized.

Never keep a crooked tailed cock as a breeder.

Best Way to Raise Hens.

Grasp them firmly with the right hand under both wings, and lift them gently. I have tried prying them up with a board, but they seem inclined to resent it more, and it is apt to cause a great disturbance among the rest of the flock, then, too, you never know which way a hen is going to point, and she always starts so suddenly that if your footing is not secure you might get hurt. So, on the whole, I think the former way is preferable.—Poultry Journal.

Enduring Fence Posts.

Charring the ends of posts that are to be set in the ground is often recommended, but when the time and trouble required in doing it are considered it is doubtful if it will pay. As a general thing heartwood and the wood from mature trees, neither very young nor very old, will last longer than wood from trees of either extreme. In heavy clay soils always wet or moist posts will endure longer than in gravelly and lighter ones that are alternately wet and dry. Usually trees grown on dry uplands, if of the proper age, are worth more as fuel or timber than such as are grown in a dense forest or low, rich land.

ORCHARD AND GARDEN.

NOTES ON THE CULTURE OF FLOWERS, FRUITS AND VEGETABLES.

The Opportunities Afforded for Tasteful Flower Gardening, or the Special Culture of Favorite Plants in Borders Beneath the Windows of One's House.

In window borders our endeavors at flower gardening need not be hampered by geometric restrictions. We have a simple border to furnish and adorn in a quiet but pretty way. A flower border backed up by a wall is delightful, as it has an excellent background, and good culture is better repaid than in flower borders near shrubs, whose roots run through them and revel in their richness. A window border is admirably shown in the accompanying engraving, where it is made to serve a double purpose in supporting the creepers that will eventually hide the naked walls and in growing flowers. The size of window

A WINDOW BORDER.

borders must be ruled by the surroundings, but whether narrow or wide they can be well filled. It is a great mistake to confine them to the culture of summer flowers only.

If creepers are desired upon the walls of the house, and the borders are narrow, there will not be room for many flowers, as the creepers may want all the nutriment the soil contains to sustain them. Those who object to creepers of a permanent character upon the walls may adorn them for the summer by placing a few branches of convolvulus, nasturtium, eccremocarpus or the many lovely climbers. Narrow borders may be made delightful by planting them with fragrant plants and dwarf shrubs, such sweet scented things as the sweet verbena, rosemary and lavender.

Where the borders are wide they permit of some of the best hardy flowers being grown. In these borders it is better to make a distinct feature with a few suitable hardy flowers, grown in masses and of sufficient quantity to be effective. If the house is large and the borders are numerous each one may be a distinct feature in itself and differ materially from the others. A border of pegged down roses would be a pretty feature and an uncommon one. These suggestions are merely thrown out as an assistance, and may be varied or improved upon by those who have or intend to make borders of this description.

Clover as a Weed Exterminator.

Among its other excellent qualities as an agricultural plant it is a common experience among farmers that clover is one of the best exterminators of weeds. Air and sunshine are as necessary for the life of weeds as they are for cultivated plants, and when growing together, if one is thrifty enough to outgrow and overshadow the other, if not disturbed, it eventually takes possession of the ground. So where clover is thickly sown on ground naturally weedy the two yearly mowings and the shade will prove too much for nearly all varieties of weeds, and when the ground is plowed for a different crop it will not only be enriched from the clover, but will be comparatively free from weeds. But it must not be forgotten that land may be so unfertile that clover cannot be grown upon it without first manuring it and putting the soil into a suitable condition for receiving the seed, while a great many kinds of weeds have the faculty of growing on very poor land without any fertilizer whatever.

Hardy Annuals.

There are numerous hardy annuals which are readily established in the garden, where they will annually reproduce themselves from self sown seed if the ground is not upset every spring. The prickly poppy is one of these. Poppies once grown in a garden may be found in every corner, for their seed crop is enormous and very tenacious of vitality. But for persistent reproduction commend me to the morning glory. The Allegheny vine, though a biennial, seems never to desert the garden. Calliopsis is a well known annual, as are calendulas and nasturtiums.

In the Vegetable Garden.

A good rule is to sow the smooth peas for the earliest crops, as these are hardy, and reserve the wrinkled kinds for later plantings.

Plant the garden so as to have all of the ground occupied during the growing season. There is no advantage in planting any kind of garden seed when the soil is wet and cold.

Wood ashes makes the best top dressing for the onion bed.

Onions, lettuce, pease, beets, radish and spinach can be sown as soon as the soil can be worked.

Remarks About Pears.

Pears can be grown as cheap as apples, are not so much trouble and bear sooner, according to J. M. Pearson, who had the following to say at the Alton, Ills., Horticultural society meeting: "With me the Seckle never blighted as long as I plowed to the trees, but as soon as I plowed away from the trees, as I had to do after a few years, they began to blight. I have found it necessary to thin out the centers of the Seckle, as it grows so very bushy that the pears in the center are too small. Sheldon has been profitable. Duchess is the best as a dwarf."

A Word About Timothy Seed.

From careful germination tests made by Professor Goff, of the Wisconsin station, it has been found that the hulled grains of timothy seed neither germinate so well nor retain their vitality so long as those not hulled; also that timothy seed, when properly stored, is fairly reliable up to five years old.

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REARING SHORTHORNS.

What a Veteran English Breeder Has to Say About It.

John Handley, of Greenhead, Westmoreland, who is one of the most successful breeders and exhibitors in England today, gives in The Breeders' Gazette his views on breeding as follows:

If I were starting a new herd of Shorthorns I should buy the best looking females that I could lay hold of, combining milking and beef producing qualities, making doubly sure they were of a good, sound constitutioned family. We breeders must endeavor to produce a good milking Shorthorn, and when dry a cow that will quickly get fat. I believe we have Shorthorns in this district that combine, as a rule, the milking and feeding properties in a way that no other breed of cattle in the world can equal.

As to the selection of a male Shorthorn as a sire for stock purposes generally, I am always particular to try to obtain an animal with the best individual merit; I always hesitate to use a bull unless he is descended from a good milking family. His dam ought to have a good sized and nicely shaped udder, and his grandam also. During the last ten or fifteen years I have used bulls descended from the champion Royal English blood. If any person asks me what I would prefer to use as a sire I should reply a Champion of England bull descended from a first class family on both male and female side. I may state that I have had the pleasure of using in the Greenhead herd of Shorthorns something like ten Royal and Highland of Scotland first and champion prize winners during the last ten years. My motto in buying a male animal for herd purposes is, buy the best animal I can lay hold of descended from good milk and beef producing parents, giving fashionable and line breeding only a secondary consideration.

In breeding Shorthorns of the present day, when fashion and line breeding are fast dying out of date, it is good looking and strong constitutioned and robust animals that breeders must try and breed to make Shorthorn breeding pay. It is my humble opinion that fashionable or line breeding and the craze that some people got for blood and fashion was the greatest curse that ever occurred in Shorthorn breeding.

The sires that have generally been used at Greenhead have had a strong admixture of Booth blood. From no one herd in Great Britain of late years, I believe, have descended more Royal and Highland winners than the herd of the late William Linton, of Sheriff Hutton, W. York, who generally used pure Booth sires and who was the breeder of Sir Arthur Ingram and Beau Benedict, used at Greenhead and Englewood Bank, two of the most impressive sires of late years, and from which more Royal and Highland winners have descended than almost any other two bulls. If you have good sires and good dams I think people are bound to breed something good, either for the show yard or the sale ring.

True Independence.

The stock farmer has the most independent life in the world, says The Western Agriculturist. His stock and grass grows day and night, rain or shine, without a host of hands to feed and pay off. He is more independent of the bad seasons than the grain grower, who loses a crop when the season is bad. True, there is nothing now to brag of in prices of stock, but still it is better than any other business on the farm, and if we have high grade stock we get the top of the markets that pay well even in these times.

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Success with Peaches.

Rural New Yorker says: To be successful in peach culture certain conditions are important—viz., soil, varieties, cultivation, fertilizing and pruning. The soil should be well drained, as the peach will not endure wet feet; for this reason high, rolling ground or even mountain sides with a northern and western exposure make excellent sites. Good, clean cultivation from May until August is just as necessary for peaches as for corn or potatoes. Most soils suitable for the peach contain enough of the elements of fertility to answer the requirements of the tree until of bearing age, when a fertilizer containing phosphoric acid and potash should be applied —300 to 600 pounds per acre—400 pounds of bone meal and 200 pounds of muriate of potash well mixed.

The money value of a crop depends very much on the grower. He must have a vigorous, healthy tree; the fruit must be well thinned (when necessary), either by pruning or hand picking, one or both, to give it fair size and color. It must be picked when at the right state —not too green or yet too ripe to bear transportation. Some fruits, as the pear and our native plums, are much improved in quality by ripening after they have been picked. The reverse is true of the peach.

In the Flower Garden.

The seeds of petunias, verbenas, coleus, Phlox Drummondii, china asters for early bloom, cannas, annual chrysanthemums, cosmos flower, zinnias, balsams, stocks, castor oil beans, sunflowers, ageratum, pot marigolds, single dahlias, blue lobelia, nasturtiums, salvia splendens, pyrethrums and many others may be sown early with advantage.

Sanvitalia procumbens is a handsome annual, the seeds of which are worth starting early, since when it begins to bloom it never stops till killed by frost. It is a composite, its double yellow flowers being very pretty and produced abundantly. As its name implies, it is a procumbent plant, and needs no tying up. The seedlings should be put in small pots as soon as they can be handled, and transferred to the border when the ground gets warm.—Orchard and Garden.

Horticulture Items.

It is a mistake to seed a young orchard down to grass unless the trees are well established and the soil is reasonably rich.

The Arbor Day movement has reached Australia.

A good washing of the trunks of the trees early in the season with strong soap suds is often very beneficial in destroying pests that find a hiding place in the bark.

For impoverished lawns in which the grass shows thin and poor apply a good top dressing of compost if you have it; if not, apply wood ashes and bone flour, or any complete fertilizer at the rate of about 600 pounds per acre.

Requisites for Roses.

The most suitable soil for roses is a light, friable loam, abounding in decaying vegetation, such as thoroughly decomposed sods and leaf mold. With this mix, previous to planting, some bone dust and decayed manure. Avoid for roses a retentive soil without natural drainage. A liberal dressing of bone dust at the time of setting the plants assists these to a vigorous growth and prolific bloom. It will also be found beneficial to keep the soil around a rose bush well loosened. When the plants are blooming profusely, liquid preparations, such as soapsuds, manure in solution, soot water, etc., are beneficial, if not applied too strong.

Points of Interest.

This fact stands out in the midst of the disastrous experience of numerous sheep raisers in the past half dozen years: The price of wool has been like the Indian's description of the white man, "mighty onsartain," but more and more mutton has been consumed every year. The inhabitants of the United States are becoming a sheep eating people, and you can depend on that. When wool does not pay, therefore, you can be sure that good fat mutton always will.

In western Colorado mutton brings a better price per pound than beef.

The hogs of Maine, Rhode Island and Connecticut bring the highest price per head of those of any of the states.

The year 1890 has added more than a thousand new trotters to the 2:30 list in America.

A movement is now on foot to cross the American trotting horse with English hackneys. It is expected that from this cross an animal will result which will possess the speed of the trotter and the strength and size of the hackney. It is hoped to produce a superior carriage horse from the cross.

Big hogs are raised in South Dakota in spite of the belief that swine thrive best in a warmer climate. A farmer near Sioux Falls lately sold seventy-five hogs that averaged 375 pounds apiece. But how old were they?

If the sheep is healthy and growing, putting on flesh instead of shrinking, the mutton will not have a woolly flavor. It is the sheep that is on the down grade that produces woolly mutton.—Field and Farm.

Eastern farmers should think how it would seem to go out among their herds some morning and find that from fifty to a hundred of their best and fattest cattle have been killed or stolen during the night. This is what the redskins have been at in some localities.

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Collection No. 1.

15 Packets Choice Flower Seeds, as follows: 1 packet each Choice Mixed Asters, Balsam, Balloon Vine, Calendula (Prince of Orange) Candy Tuft, Summer Chrysanthemum, Clarkea, Convolvulas or Morning Glory, (mixed colors), Nigella, (love in a mist), Marigold, (choice mixed), Mignonette, Climbing Nastartium, Sweet Pea, Striped Petunia, and Finest Mixed Pansies.

Collection No. 2.

Contains 12 Packets Choicest Flower Seeds, as follows: 1 packet each Choice Mixed Asters, Balsam or Lady Slipper, Cypress Vine, Choice German Pansies, Mammoth Verbena, Mignonette, Phlox, Drummondi, Finest Bedding Petunia, Double Zinnia, Double Portulaca, Moon Flower, and Finest Cockscomb.

Collection No. 3.

Contains 8 Packets Vegetable and 8 Packets Flower Seeds. 1 packet each Early Beet, Early Summer Cabbage, Early Spine Cucumber, Lettuce, French Breakfast Radish, Vegetable Oyster, Spinach and Dwarf Champion Tomato.

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Collection No. 5.

Contains 12 Packets Choice Vegetable Seed.—1 packet each Blood Beet, Marblehead Mammoth Cabbage, Half Long Carrot, White Plume Celery, Improved White Spine Cucumber, Egg Plant, Boston Market Lettuce, Surprise Melon, Yellow Danvers Onion, Large Bell Pepper, Scarlet Olive Shaped Radish, and Cardinal Tomato.

Collection No. 6.

Contains 12 Packets Vegetable Seed.—1 packet each Black Wax and Golden Wax Beans, 1 packet each Early and Late Beet, 1 packet each Early Jersey Wakefield, and large late Flat Dutch Cabbage, 2 packets Carrots, 1 early and 1 late, 1 packet each Yellow Danvers and Silver Skin Onions, 1 packet Summer Squash, and 1 packet Early Tomato.

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Advance cash orders sent this month will be taken for **$1.50.** Advance cash orders received next month will be taken at **$2.00.** Books ordered at above rates will be mailed direct to purchasers on the day the book is issued, May first. Retail price on and after May first will be $2.75, **with no discounts**, and can be obtained only through us. Send your order now and **save $1.25.** Send it next month and **save 75 cents.** Have your friends order with you. **Over 4,000 advance orders already received. AGENTS WANTED** in every town to begin work May 1st. Canvassing outfit sent postpaid for 56 cents. We guarantee satisfaction, and refer you to Dun's or Bradstreet's agencie for our responsibility. Send money by post-office order. Postage stamps acceptable.

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OUR DAIRY PRODUCTS.

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When a Healthy Calf Is Between Three and Five Days Old and Has Its Stomach Full of Milk a Rennet Is at Its Best—Use Only the Cleanest Salt.

A rennet is at its best when a healthy calf is between three and five days old and has its stomach full of milk. The contents of the stomach should be emptied, but no washing of the inside should be allowed. Salting and stretching over a bow is better than to fill full of salt. None but the best and cleanest salt should ever touch it. If stretched over a stick or filled with salt, hang in a dry pure air, so that the skins do not touch one another—as they will mold if they do. Many believe the older they are, if kept dry and white, the stronger they are, but we don't know about that, but used them when dried to a crisped condition. When ready to abstract the rennet element from them, soak them in water that has been boiled and cooled, with salt enough in it to keep the liquor from tainting, as it is an animal substance and will taint nearly as quickly as fresh meat. Lukewarm water will hasten the process, but in no case use water up to 120, for that temperature ruins the rennet and makes the coagulating element inert and worthless.

Let the skins soak a week or more, then handle and squeeze, getting as strong liquor as possible from them. Then set them again, in more fresh water, and get liquor of less strength, always bearing in mind to avoid weak dilutions as much as possible. Then mix the first and second tinctures, so that all will be of one strength. To purify the liquor filter it through layers of straw, clean gravel and charcoal, after having strained out all animal tissues by passing through cloth.

Be sure and have it salt enough to keep well; then put in jugs, or well covered jars, and set in cool cellar to keep till wanted. It is well to make enough early in the spring, when the calf crop is plenteous, to last the season. As the whole has the same strength, the cheese maker can soon learn how much of it to use per 1,000 pounds of milk.—Hoard's Dairyman.

Co-operative Creameries.

The Fairbank Review, published in one of the best dairy districts in Iowa, tersely sets forth the conditions of success in the management of creameries conducted on the co-operative plan by farmers themselves:

There seems to be three things necessary to the successful conduct of a creamery, without which it would be useless to look for satisfactory results for any length of time.

First—There should be a business manager whose word is law and power absolute in everything pertaining to the business to supervise the operatives and dictate in regard to the delivery of milk. His powers may cease here or he may be intrusted to make sales and to keep the books of the concern if qualified. Having a business manager the work of each day should be balanced up at night, and if there are any leakages they should be traced to their source.

Second—There should be a board of directors chosen from among the stockholders of the brightest minded and most conspicuous for integrity, business sagacity, prudence and sober mindedness. The board of directors should decide for the company upon improvements or changes in business, repairs and all matters involving expense; they should direct the business manager, examine his work and supervise the sales, but never personally meddle with the management. The business manager should be selected by the board of directors.

Third—Some kind of a cream or butter test must be applied once or twice a week to every patron's milk, no matter at what cost or inconvenience. It must be applied and its results abided by without fear or favor, to every one impartially. No creamery can or ought to succeed which fails to accurately test its milk, going through the list of patrons at least once a week. Of course there are other minor details profitable to be taken into consideration, but the above rules, if reasonably enforced, may be depended on to lay the foundation for a prosperous business.

Notes.

In deciding about starting a creamery on a large scale, consider first carefully whether you want a cheese factory or butter factory. Fix on the establishment best adapted to the kind of cows in the neighborhood of the creamery, unless you expect to own all the cows yourself. This is often done incase of private creameries.

Dairy Commissioner Tupper, of Iowa, has the sympathies of all who know what he has been and done. Last year he visited some seventy-five Iowa cheese and butter factories, and sampled cheese wherever he went, till he nearly choked himself on it.

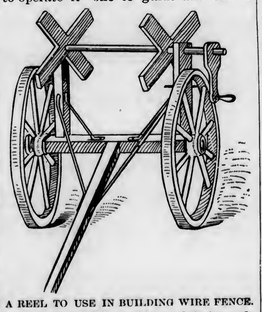
Read this item, you who contemplate winter dairying another year: A successful winter dairyman in western New York buys fresh cows in the fall, milks them all winter, feeds them plentifully, and in the spring, when their milk begins to fail, he sells them for fat beef for more than he paid for them.

The Maine Agricultural station reports as the result of experiments that poor milk gives poor cream, and that milk from cows approaching calving time has a diminished butter value.

Senator Hampton says that a thoroughbred stallion is the gamest cavalry horse in the world.

An Ingenious Contrivance.

A Wisconsin farmer, A. K. M. Pomeroy by name, sent to The Farm Journal not long ago the drawing, here reproduced, of a reel for use in building or moving barb or plain wire fence. It takes two to operate it—one to guide and one to



A REEL TO USE IN BUILDING WIRE FENCE.

turn the reel. The cut is so plain it needs little explanation. The uprights are braced by iron rods, and a peg put through one of the standards prevents both the wheel and the reel from revolving.

Mr. Pomeroy facetiously remarks: "If you do not want it yourself you can lend it to the neighbors. Mine goes all around the neighborhood."

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Besides this, there are three chapters in the work which are worthy of special mention, namely, those on "Diseases of Women," "Diseases of Infants" and "Care of the Sick."

The first of these is a model of its kind. It is chaste in language, contains no disgusting pictures for children to happen on and be over curious about, and taken altogether is the most practical, sensible and straight-forward treatise upon this delicate subject that has ever been printed.

This chapter alone is worth many times the cost of the book to every mother, even if it had been purchased at its regular price.

The other chapters referred to are equally well written and valuable.

But we need not further enlarge on the merits of the book. We have said enough to substantiate our claims that it is different from all similar books, and to show that is well worth having. By special arrangements with the publishers we are enabled to send this book by mail or express prepaid for only **$1.25.**

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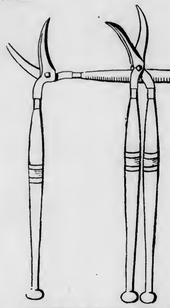
ORCHARD AND GARDEN.

TOPICS OF IMPORTANCE TO FRUIT GROWERS AND GARDENERS.

Shears for Pruning Bush Fruits, Such as Raspberries, Blackberries, Currants and Gooseberries, That Cut When the Handles Are Open and When Shut.

The accompanying picture, a reprint from Popular Gardening, represents a pair of pruning shears, both open and shut, which a Michigan horticulturist has used for two years with entire satisfaction. This is what he says about them:



PRUNING SHEARS OPEN AND SHUT.

I am sure I can do more work with them than with anything I ever tried. They come very handy for pruning all kinds of bush fruits, such as raspberries, blackberries, currants and gooseberries. These shears cut both ways—that is, when the handles are open and when shut. The only drawback to their use, perhaps, is the price. The least I can have them made for is $2.50.

A Commercial Orchard.

Mr. John Y. Stone, a well known apple grower of the west, in a paper read before a meeting of Iowa horticulturists, advised, where big money returns are the chief object, the following plan for planting an apple orchard:

The orchardist should plant the long lived varieties 33 or 34 feet by 26 feet apart. He should then double this by planting the short lived, early bearing, heavy producing varieties midway between the trees in the rows in which the trees stand most widely apart. He should then plant of the last mentioned varieties one tree in the center of each square.

There will then be about 200 trees to each acre. The planter will do all of this at the same time, being careful that in mingling his varieties he preserves the position of the long lived trees for the orchard of after years, when three-fourths of the trees will have died or been cut down. He should so intermingle his varieties as to have at least two of the short lived and at least two of the long lived ones together for the purpose of more thorough pollenization. For the first six years he should thoroughly cultivate the soil. In ten years, when branches begin to interfere from this close planting, cutting back the side branches of the shorter lived trees will begin, until finally the necessity arises for entirely removing these to make space for the permanent orchard. When the last of the removing process has been completed the trees will stand 26 by 33 or 34 feet apart—a very good distance for an old orchard. Indeed, the time to start an orchard of fifty trees to the acre is when the trees are twenty years old, affirms Mr. Stone.

That the great number of trees may not impoverish the soil before the surplus trees have served their purpose and been cut out, the fertility must be kept up with green rye or buckwheat, or even green corn, plowed under at the proper time each year. But a better plan yet is the use of the red clover. In reply to objections raised to this plan of close planting Mr. Stone contended that there is more profit in planting 200 trees to the acre and cutting them down and replanting, than in planting fifty trees to the acre for a thirty year period. He said: "A young man twenty-five years old may afford to plant his trees 100 feet apart, but the middle aged man will plant closely and get more in a shorter time."

Items in Sweet Potato Culture.

The soil for sweet potatoes ought to be mellow and well prepared; a sandy loam is the best. Horse manure is the preferred sort: this to be supplemented with muriate of potash or kainit, as sweet potatoes require plenty of potash. When the temperature in a sunny sheltered spot reaches 80 degs., and there is a fair prospect for its remaining near to that point for forty-eight hours, Farm Journal says it is safe to plant. The plants will begin to throw out roots in forty-eight hours, and after this time will stand a cold storm better than if such a storm strikes them immediately after being set.

A long, strong, well rooted plant is very desirable, and this should be set deeply enough to touch the compost. Some of the best growers water the plants immediately after setting, even if rain has recently fallen. If the weather be dry they should be watered two or three times during the first week. Cultivation should begin in ten days after setting by running the cultivator between the ridges and breaking the crust around the plant with the hoe. The hoe alone may be used at this time, and the first cultivation with the horse be done across the ridges, tearing them down and forming the hills.

When to Buy Bees.

Professor Cook says on this subject in his book on bee keeping: It is safe to purchase any time in the summer. In April or May (of course you will purchase very strong stocks), if in the latitude of New York or Chicago—it will be earlier further south—you will be able to pay more, as you will secure the increase of both honey and bees. If you desire to purchase in autumn that you may gain the experience of wintering, either demand that the one of whom you purchase insure the safe uniting of the bees, or else that he reduce the selling price at least one-third from his rates the next April. Otherwise the novice had better purchase in the spring. If you are to transfer at once, it is desirable that you buy in the spring, as it is vexatious, especially for the beginners to transfer when the hives are crowded with brood and honey.

Agricultural Notes.

Fordhook early watermelon is claimed to be the earliest melon of its size and of the finest quality.

Nitrogen is the most costly ingredient of manures. One thousand pounds of stable manure rarely contain more than five pounds of nitrogen, says Rural New Yorker.

The merino will no doubt always be the most successful sheep to grow on our high prairies and dry plateaus. The English mutton breeds thrive better in the low altitudes and damp climates.

The new Giant white cucumber is certainly a very distinct variety. It is described as growing to an immense size.

FEEDING SMUTTY CORN.

What It Has Done to Valuable Live Stock in Tennessee.

Near New Middleton considerable corn was gathered that had rotted on the stalk; some of the corn had considerable smut. This corn has been fed to horses, cattle and hogs. W. B. Denny recently lost a horse; James Enoch also lost a horse; Lewis Allen had a horse to die, and the Widow Pruitt lost one also. Several other horses died quite recently in that neighborhood. Post mortem examinations were made in four cases, the result showing death to be caused by rotted and smutty corn.

Mr. Gibbs, living about a mile on the south side of the river, has a fine colt sick, the result of feeding smutty corn, so supposed. James Davis has a fine mare that he expects to lose any minute; she has been fed on rotted and smutty corn.

These cases were investigated by our informant, and nearly every animal had been kept up and fed on corn, the owners not having in most instances any bluegrass pasturage, which acts as a purge. The lungs of each animal dissected were completely stopped up.

J. H. Walker, a veterinary surgeon of Alexandria, sold recently a fine mare for $200, the animal to be delivered the next day. The morning following the mare was given two ears of rotted corn by a colored man who had her in charge. She died in about two hours afterward with spasmodic colic. Mr. Walker is satisfied the corn killed her.

Alexander Thompson, living on Buffalo creek, lost a horse last Saturday morning. Mr. Hailey, our informant of the above, states that considerable smutty and rotted corn was gathered in his neighborhood, and that his own mules, which had been fed a little of the corn, are afflicted with bad coughs, resembling distemper.—Smith County (Tenn.) Record.

Killing Hogs.

It is not altogether easy to describe the process known as sticking a hog, but with the assistance of a cut Prairie Farmer manages to make it understood.

To begin right get the hog securely in a pen that will just hold him. Stun him by a blow sharply given in the forehead, with a pole ax or similar weapon, half way between the eyes and top of the head, or shoot him in the forehead with a revolver. Then before the animal begins to struggle turn him square on his back, place a foot on each side of the head, facing the animal, hold the head

STICKING A HOG.

down to the ground by placing the left hand on the snout. Now place the point of the knife—a seven-inch blade is long enough for any hog—on the animal's throat, at the same time looking over the carcass, and push the knife in a straight line in the direction of the root of the tail, as shown. Withdraw the knife quickly, and a gushing stream will follow it out.

The idea is to cut the aorta, the great artery rising from the left ventricle of the heart. If you do not stick just right the first one you will see why when the hog is opened. A little observation, however, will soon enable you to become expert.

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A Good Strong Road Cart, 10
Top Buggy with Shafts, 55
4000 lb. Wagon Scale, 40
900 lb. Platform Scale, 15
A Neat Buggy Harness, 7
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ANIMAL INTERESTS.

WHOLESALE SACRIFICE OF RANGE CATTLE IN THE WEST.

Some Language Which Is Plain on This Subject—Not Enough Cows in the United States to Produce a Steer Crop That Is Sufficient for the Demand.

Any person who has had access to the market reports contained in any of the papers published throughout the country during the last four years knows that the marketing of cattle has been something wonderful. They know also that cows and calves have been forced on the market, and if the result has not been a reduction something is wrong. Any person who has been connected with the range business knows that the object was a reduction or sacrifice of cattle, as it was no longer a profitable thing to run range cattle at the ruling price, which has dropped lower and lower because of an overcrowded market.

Now if this wholesale sacrifice which has been going on since '86 has not resulted in a reduction it is one of the seven wonders. Cattle holdings are not increasing in this country; on the contrary, they have been falling off for years, and at this moment there is such decrease in numbers as compared with former years that a general knowledge of the facts as they exist would stimulate values, for the reason that once it became generally known just how many cattle there are in the country, the shipment of she cattle, yearlings, calves and unripe stuff would cease and a shortage would at once be seen.

We have said before that the trouble with market prices of cattle is overmarketing, and it is going to be apparent very shortly that there are not cows enough in the United States to produce a steer crop sufficient to supply the home demand for beef if we should keep the she stock and yearlings off the market for three years. Cows are worth double the amount they will bring on the beef markets for use at home if owners could only be convinced and hold them off the market till the actual condition of the product of the country becomes apparent, for the farm cattle have been as systematically sacrificed as the range cattle, and the whole matter is going to be forced upon the country with all the horrors of a robbery of beef from the dinner tables of the working classes.

Take a "hunch" and hang on to anything in the way of a beef animal till the shortage appears: it won't be long and is inevitable.

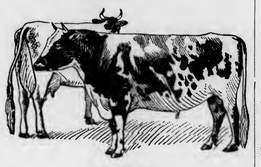
This is the wrong season of the year for silver lining editorials, so this cannot be classed as such.—Montana Stock Growers' Journal.

Brood Sows.

The greater thriftiness of pigs from a sow that has borne one, two or three previous litters is partly due doubtless to the greater amount of milk she gives. There is probably as much proportional difference here as between a mature cow and a heifer with her first calf. Besides, in the young sow the milk is not so rich, as part of what should go to make it is kept for growth of the mother. It is possible to keep sows too long, but this is more frequently from their learning bad habits, becoming unruly or eating their young, than from failure to give full messes of milk, or to produce good litters of thrifty young, and sometimes even farrow more than they have teats, in which case it is economy to kill the weaklings in excess.—Nor'west Farmer.

Ayrshires.

The division of milk cows of the best known breeds seems to be as follows: Jerseys for butter, Holsteins for cheese and Ayrshires for both milk and cheese. The Ayrshire is probably the best cow for the dairyman who supplies milk to city customers. She gives a great quantity of milk, and is not such an immense feeder as the Holstein.



AYRSHIRE.

The cow in the picture gave 8,000 pounds of milk in 10½ months. One accustomed to cows would know at a glance at her immense udder that she would be a famous milker. A large, well formed udder and fine hair are the two surest signs of a good milker. Ayrshire butter, however, is rather pale, and needs to be colored.

The Ayrshire thrives and is very popular as a dairy cow in a hilly, moderately cold climate, though there is no reason to suppose she would not do well elsewhere. She is the "old reliable" in New England and the middle states. Ayrshires are easily kept, are hardy and excellent breeders, producing calves till they are 20 years old.

Cattle of this breed are of a rich dark red color, verging often upon brown and spotted with white. Like all milk breeds the cows have small, narrow faces and muzzles, with thin tails and delicate legs. The neck tapers finely, the hair is soft and thick, and the back is remarkably straight. In a good milker the udder always shows particularly large behind, and the teats are set well apart. Ayrshire cows are very gentle and docile in disposition.

Salt Lake Stock Yards.

The stock yards scheme of Salt Lake City bids fair to be consummated, and is being pushed with commendable enterprise. There are over 120 incorporators, including many Omaha, Kansas City and Chicago capitalists, as well as Salt Lake business men. The plans for the new yards have been prepared by Superintendent Childs, of the Kansas City Union stock yards, and cover about twenty-five acres, including buildings, stable, yards and sheds for the handling of cattle, sheep, hogs and horses. The exchange building, which includes the office of the stock yards company, offices for the various commission firms, probably a bank, etc., has a frontage of about 130 feet, is two stories in height, and has a depth of 50 feet. The present plan also contemplates a hotel and restaurant separate from the exchange building. No reason exists why a large and profitable cattle trade should not be built up at Salt Lake, where the business of Idaho, Montana, Nevada and Utah can be concentrated.—Field and Farm.

The Woolly West.

The Big Timber Pioneer takes pride in recounting the following facts to the credit of its town and county in general: One million six hundred thousand pounds of wool shipped from Big Timber the past season, valued at 18 cents per pound; 23,000 mutton sheep shipped, valued at $3.10 per head: 10,000 stock sheep sold to Dakota parties at an average of $2.50 per head; nine cars of cattle shipped at a value of $35 per head.—Montana Live Stock Journal.

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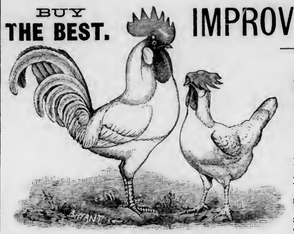

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Farm & Vineyard

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VOL. 5. NO. 2. ERIE, PA., JUNE, 1891. FIFTY CENTS A YEAR.

Grapes for Raisins.

The California raisin industry is one of our most profitable, promising, and rapidly extending specialties. Not only so, but the raisin is winning wide reputation for our State in distant parts, and our raisin districts, especially in the San Joaquin valley, are enjoying a good share of the influx of population. A single branch of production which made an outturn last year of one and a quarter million 20-pound boxes, or in round numbers 25,000,000 pounds of dried fruit, and which bids fair to increase this amount this year possibly 33 per cent., is naturally attracting much attention. This interest is also stimulated, no doubt, by the fact that in spite of this production and the foreign product as well, there is this year a great shortage in the world's supply of raisins. The outlook is that those who have been planting raisins so resolutely and confidently during the last few years will find themselves luxuriating in generous returns this year if no unfavorable influence prevents the realization of present crop promise.

In winter are seen the vines in their regular rows correctly aligned from any point of view. The foliage has fallen, the canes have been pruned back to a few buds, and nothing appears to the casual observer but gnarly stumps with crests of pronged spurs, the old bark black, ragged and uninviting, the ground covered with rubbish of dead leaves and brush and clods. Such is the aspect of a vineyard until the winter rains start the growth of verdure along the rows, then follow the plowing and harrowing, or cultivating, and the sorry vine stumps are surrounded by an even surface of well pulverized soil; soon the vine feels the warmth of the spring sunshine, the foliage starts, the gnarled, spurred head of the vine is hidden beneath a tuft of crisp, delicate leaves; then, if frosts forbear, out shoot the canes with twining tendrils, the vine stump is lost to sight, the field becomes an expanse of beautiful green mounds. Back and forth go the cultivators, each time the pathway of brown soil becoming narrower, until at last vine line tendrils with vine, and the field is a sea of green; vine stump, brown soil, everything is concealed beneath the dense mantle of verdure. Such is the California vineyard at midsummer. In young vineyards there will be protruding stakes and bare patches of soil, but in the old vineyards there is neither sign of stake nor trellis. The vine pruned to support its own weight, except such as it can distribute over the surrounding soil, needs no support. There is nothing handsomer in the midsummer landscape than the green of the vineyard contrasting with the browns and yellows of the grain fields or the unimproved hillsides. Orchards are green as well, but the vine has a density of foliage and uniform verdure which can be selected as far as the eye can perceive.

As the summer shades into autumn, the scenes in the vineyards change. The heavy clusters of white grapes are gathered, spread upon wooden trays, and exposed to the clear sunshine and warm dry night air of the interior valleys of California. As the available space between the vines does not always accommodate the fruit, all surrounding spaces are employed. The avenues around the vines are spread with trays, and the banks of the irrigation ditch are also covered.—*Min. and Sci. Press.*

Judge Miller says that next to the growing of grain, fruit is the most important. Not one-half of the people in the country have half enough of fruit.

The Best Varieties of Grapes for Western States.

The most valuable grapes for the West, according to Hon. Silas Wilson, are seedlings of Concord, and named in the order of their value, these are Worden, Moore's Early, Lady, Pocklington, Cottage, Martha, Hayes, Woodruff's Rud, Moore's Diamond, with Esther, Colrain, Rockwood and Eaton as promising seedlings. Among the promising seedlings recommended by Mr. T. V. Munson, of Texas, are Brilliant, George W. Campbell, Romel, and Herman Jaeger. Of sixty varieties fruited last year, Mr. Wilson names for his region the following as the best six: white, Moore's Diamond, Pocklington and Lady; black, Worden, Moore's Early and Cottage.—*Garden and Forest.*

The Three Best Grapes.

The New Jersey State Agricultura Society, balloting for the best three grapes for general use, one of each color, decided in favor of the Brighton, red; Worden, black; and Niagara, white, and only a very few growers in that state would to-day make any alteration in the list.

Grapes, New and Old.

Hon. Wilson thinks it noticeable that introducers of the many new grapes brought to public notice in the past few years, refer to Concord as the standard by which they wish them to be measured. Many valuable varieties are seedings of Concord. Named in the order of their value, as tested by Mr. Wilson, they are: Worden, Moore's Early, Lady, Pocklington, Cottage, Martha, Hayes, Woodruff's Red, and Moore's Diamond.

Very promising new grapes are Esther, Colorain, Rockwood and Eaton. Of 65 varieties of grapes fruited last season, Mr. Wilson names the six best as follows: *White,* Moore's Diamond, Pocklington, Lady; *Black,* Worden, Moore's Early, Cottage. Take these six varieties, all Concord seedlings, and the Concord itself, out of the list of good grapes for Iowa, and what have you left? Empire State and Niagara have not met his expectations as grapes of value for market purposes.—*Popular Gardening.*

Washing Wool on the Sheep's Back.

By Albert H. Rhodes.

For the Farm and Vineyard.

Cruelty to animals alone should utterly wipe out the absurd practice of washing wool on the sheep, mainly on account of cruelty to the sheep and lambs, but also on account of cruelty to the laborers, who often catch severe colds and have a pull at rheumatism, or worse still, have a pull at the la grippe, endangering their lives. There is one case of this kind near us now, and hundreds more in the state, no doubt.

In the first place, but a small proportion of the foul matter is by this plan extracted from the wool, and what is called washed wool goes through the same cleansing process as the unwashed before it is ready for manufacturing. So that the same time is spent with the washed as with the other, even after the so called washing while on the sheep It is claimed that in the sale of wool the wool grower would be obliged to accept a depreciated price for his wool, really below what the weight of foreign matter in the wool would indicate, and that the farmer is thus driven to wash his sheep in defense of his rights, and then he can demand the price for washed wool. Now, it is easy to see that if the foolish habit was thrown up entirely that all wool would be unwashed when it went on the market, and then the buyer would have to buy according to his own judgment in regard to the filth contained in his purchase. This would of course cause a careful examination of his purchase and a more satisfactory opinion would be had of the quality of the wool before purchasing.

In certain localities this custom of thus washing sheep has been abandoned, but in other localities the old tradition still remains extant, with a fair prospect of remaining so indefinitely. The reasons why we have come to these conclusions are yet by no means exhausted. The sheep often have young lambs and in driving the sheep a couple of miles in the hot weather the lambs are worried out, and if young, some of them never recover from the fatigue of the drive, and die. Many of the mothers with young lambs also catch cold and cough and run at the nose. This condition of the mother sheep is very destructive to the growth and thriftiness of the lambs, which perhaps are to be put on an early market for sale and thus losses, sometimes of quite large dimensions, are the result. Many times a continuation of cold weather in the spring will cause the water to remain cold till late and many will put off washing their sheep till nearly the first of June, for the water to warm up a little. This keeps the poor sheep with an uncomfortable fleece on his back, which causes him to shelter in the shade of some old log or tree several weeks unnecessarily. They will also get ticky and will rub and scratch on brush and on stumps or the fence for relief, getting none from the ticks, but losing considerable wool every time they make the trial. These locks of wool, when taken in the aggregate, would amount to many pounds on a flock of sheep, and of conrse there is quite a loss. This might be saved by shearing early and protecting from the cold rain storms till the wool had started or till the weather had become more equable. After shearing you can eradicate the tick and your sheep would then be on the road to improvement at once, and the lambs would also thrive. Now, a ewe sheep with twin lambs, covered with ticks, is in a bad, unhappy condition, and sympathy for the poor brutes alone should cause us to hesitate to do anything to aggravate their affliction.

So let us do what we can to do away with this absurd custom of plunging them into the water and scaring the poor lambs so terribly they scarcely know their own mothers as they come staggering up out of the water, often severely strangled and with the rudiments of a hard cold to contend with. Oh, how absurd.

Look at this! The Farm and Vineyard and the *Buffalo Express*, both a whole year for $1.00.

Spring Lambs and Sheep.

By E. P. Smith.

For the Farm and Vineyard.

The ewes should be watched carefully in the spring, for the success of the spring lambs depends a great deal on the condition of their mothers. It is well to have the lambs early, and they should be kept growing from their birth. To do this additional nourishment to that which they get from their dams should be given to them in the shape of oats, either whole or ground. This is an excellent grain for keeping them in health, and for making them grow rapidly. The lambs should not be allowed to roam about the fields with the flock, as they are liable to share all of the ills that affect the old ones, such as catarrh, distemper and foot rot. They should be kept separate so that their growth can be increased rapidly, for the early lambs are the ones that bring the highest prices.

Wean the lambs when they are four or five months old, and place them on fresh, tender pasture A fine pasture for weaning lambs is a grain field that has been cut and sown with clover. They should have an easy access to water and salt, and when the pasture begins to fail accustom them gradually to dry feed. This can be done by yarding them at night, and by gradually holding green feed from them. They should be castrated and docked when young; three weeks or under is considered the safest age to do this. Have an assistant to hold the tail out straight on a block, and then cut it off about an inch and a half from the body. The skin will cover the bone, and in healing will make a good shaped stub. If lambs are docked after the weather becomes quite hot, it is advisable to apply a mixture of tar, butter, and turpentine to the parts

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Raising Late Cabbage.

By N. J. Sheppard, Miller Co., Mo.

For the Farm and Vineyard.

In some localities these cannot be grown to good advantage, on account of the liability to drouth during the latter part of summer. Cabbage require considerable moisture, and when this cannot be received readily the plants will not make as good a growth as they should. For this reason many prefer to plant the larger kinds of the earlier varieties, like the Jersey Wakefields, and depending upon them for the main crop. Cabbage need a rich soil and will stand as much strong fresh manure as almost any other crop. The soil should be well prepared in a good tilth before setting out the plants. While there are a number of ways of setting out the plants, all things considered, one of the best is to take a shallow pan, fill partially full of good rich soil, and then add water until it is of the consistency of cream, Have the rows marked out three or three and a half feet apart, take up a few plants at a time, dip the roots of the plants in this, taking pains to stir around so as to get as much as possible of the mixture to adhere to the roots. Then make a place for the plants and put in, taking considerable pains to see that the soil comes in close contact with the roots. This is very important, and more plants die in transplanting from a failure to do this properly than from any other cause If the soil is dry it may be necessary to water for two or three days, but if there is a supply of moisture in the soil this will not be necessary.

One of the most important items in growing a good crop of cabbage is thorough cultivation; and with this crop more than any other, it is rarely the case that too much cultivation can be given. Frequent cultivation insures a better and a thriftier growth, and if the surface is stirred frequently it will aid very materially in retaining moisture. As with all other crops, it is the earlier cultivation that is the most important. Keep the weeds down and the soil in a good tilth and the plants will grow. Dusting the plants with slug shot will keep away the worms, or when it can be secured without too much trouble, a part of a leaf of green tobacco laid across the top of the cabbage plant, will drive away the lice and the worms.

In a very passable season and with a good soil and thorough cultivation the plants will make too vigorous a growth and some of the heads will burst open. The best remedy for this is to go through the patch and give the heads that show indications of bursting a good sharp pull sufficient to loosen the roots well. This will stop the growth and will in a great measure prevent this. While the greater part of the work of cultivating can be done with the horse and cultivator, some hoeing between the plants in the row will usually be necessary if the weeds are to be kept down thoroughly.

We pay cash to agents who work for us, getting subscriptions to the Farm & Vineyard.

Points in Bee Keeping.

A Massachusetts apiarian in a paper read before a Massachusetts farmers' meeting told how to treat a sulky colony of bees. He said:

A very good cure for a sulky colony is to take all the brood away and give full sheets of foundation. When all swarming is over with, look the section cases over and jump the filled boxes to the outside, and bring those just started on to the center. In a few days more a new set can be placed under the filled cases on the strongest colonies. Those slow about filling up had better be kept in one case and new boxes added by rows in the center, and gradually tapered down until the close of the clover season.

As soon as the clover season has passed, all the honey remaining on the hives should come off and the broom frames be examined. Wherever honey is found in any quantity it should be uncapped, extracted and the empty combs returned to the hives whence they came. We have found that it does not pay to leave honey in the hives after clover fails. It is better to extract it and feed it back when necessary, as the bees will do just as well, if not better, without it, for they will make their own living during pleasant weather. If left on the hive they will use it for brood rearing out of season and thus consume it needlessly. If needed for winter stores we have it ready to feed back at any time.

A Good Idea.

The illustration here reproduced from the Farm Journal shows how a horse may be prevented from tearing its blanket with its teeth.

A leather shield, as shown in the picture, is sewed to the halter, which does

PREVENTING A HORSE FROM TEARING ITS BLANKET.

not interfere with the animal eating, but does with its habit of tearing its blanket. The shield should extend four inches below the nose. The idea is a good one.

Profits of Feeding Sheep.

A correspondent of The Rocky Mountain Husbandman, speaking of the advantages of sheep over cattle on the western ranges, says: It is a noted fact that there is far less alarm over the prospect of short winter feed among sheep owners than any other class of stockman. The reason of this is that sheep thrive on very short feed, and when there are any points bare along the foothills flocks may be kept fairly well, even if the grass has been closely grazed in the summer.

It is also a fact that it is possible to keep three or four thousand sheep on hay about as easy as to keep so many hundred cattle. Sheep do not seem to consume food in proportion to cattle. This is probably due to the fact that they are kept constantly rustling for themselves throughout each day, except when it is storming, while cattle having no herder are inclined to lay around the premises and not go out to feed, even in pleasant weather. Sheep are better adapted to the exhausted condition of our ranges by far than cattle.

The Poultry Yard.

Incubator Chickens.

I have only run an incubator this season, getting it early in the winter and starting it up as soon as I thought I understood the directions as to how to manage it. While it is some trouble, there are several advantages, a leading one of which is that the hatching is under control. In order to receive early chickens it is very necessary to set the eggs early, and it is not always possible to induce the hens to set early, but with the incubator the hatching can be done as you prefer. Another great advantage is that when the chickens are first hatched they are free from lice, and with care in keeping the brooder clean they can be kept so, and it is easier to keep the brooder clean than a poultry house. Having them free from lice gives the chickens a better start to grow.

Having the chickens hatched early, with good care in feeding, they can be made ready for market earlier and much better prices be realized. In fact, chickens eight or ten weeks old will sell for more early in the spring than roosters or pullets six or eight months old will in the fall, with the longer time to feed and the increased risk of loss thrown in. A large number of eggs hatching at one time gives a much more even lot of chickens to feed and fatten for market, and this is another item. However, we must not suppose that all that is necessary is to put in the eggs, fill the reservoir with water and the lamp with oil, light it and let it go. I found it paid to use only the best oil and take pains every day to trim the lamp and clean the house thoroughly; to change the water in the pans regularly and keeping every part as clean as possible. The eggs were turned every day, keeping the large end up. I find that when the eggs pip in the larger end a better hatch is received, and I am satisfied that keeping the small end down in this way helps this. I also found that it paid to mark the date on every egg when it was put in, and with turkey eggs especially it was best to sprinkle them with tepid water on the twenty-ninth and thirtieth days. I found this an advantage, although the incubator I used had a pan of water in the bottom all the time. While it is not necessary to change the lamp ordinarily, yet when there was a sudden change of temperature, either cold or warm, I turned the lamp up or down. Even with 175 test oil I found that the wick and lamp would gather dirt, and that occasionally it was best to clean out thoroughly. And while I considered it best to look after it every little while, yet on the whole it took less work than to manage a lot of hens. Another item, and that is, it took less trouble to secure an even temperature in a room without a stove than with one.

Any lady who accepts our "premium" offer on page 4, and is not well satisfied with her bargain will have her money refunded on application.

Reasons for Stirring the Soil.

By Thos. D. Baird.

For the Farm and Vineyard.

There are but few farmers who have studied the reason for stirring the soil in cultivating crops. Most farmers think stirring the soil is done principally to kill grass and weeds. These are important reasons, but there are others more important.

To do anything well we should understand why it is done; understand the principles and the special points to be accomplished by it. Let the starting points be to kill grass and weeds. This must be done to let the crops have all the food and moisture in the soil, but how shall it be done in the most effective manner.

In the early stage of the crop the roots have not spread as widely through the soil as they subsequently do. If one is broken new roots soon develop from it, more so than when the plant is older. The soil, too, is wetter and colder, consequently I believe, as I have heretofore stated, that the two first workings of the crop should be done deep. Deep plowing is more effective, kills grass and weeds better, and it will dry off the soil more than shallow plowing, because it loosens up more soil, which is more exposed to the air to dry it off and warm it up.

Another reason for stirring the soil is to admit the air freely into it. This is absolutely necessary, for the roots of plants can no more live without air than an animal. Corn will turn yellow and the farmer thinks it is due to wet weather, which is all very true, but it is the excessive rains that have filled the soil and the air is excluded. Now, when the surface becomes compacted by excessive rains and the interstices by which the air penetrates the soil are closed the roots are cut off from their supply and the soil must be stirred to break up or loosen to admit the air again.

But one of the most important reasons for stirring the soil is to continue the elaboration of food in the soil. A growing crop takes up rapidly the supply of available plant food in the soil and makes it important to secure a good crop that it be replenished as fast as consumed. The soil contains a good deal of food material in the shape of vegetable matter and fragments of minerals, but it is not available. Air and moisture are the active agents in promoting those decompositions and recompositions of these which fit them for absorption and assimilation by plants. Not only does stirring the soil decompose the vegetable and mineral matter contained therein, rendering them available as plant food, but it has a mechanical effect by which ammonia is absorbed and imparted to the soil.

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Wisdom From Grapes.

By G. W. Stebbins.

For the Farm and Vineyard.

Chautauqua county is famous for ideas: the Chautauqua idea; the Theosophical idea, developed by the Oliphants at Brocton; the Spiritual idea, at Cassadaga; the New Theology, at Jamestown; but the most practical of all Chautauqua ideas, is that of marketing grapes, also developed at Brocton. When this idea is elaborated and applied to other farm products it will be of immense benefit to humanity. Once Chautauqua county was famous for peaches, but they rotted on the ground or were consumed by dogs. What better fate would the grapes have met but for the idea of developing a market for them? Cannot the same principle be applied to other produce? Corn is burned in Kansas for fuel while Pennsylvania coal miners starve. Hundreds of stalwart men lie idle. This muscular force wasted for lack of work, which the same business tact that distributes grapes would set to work making goods farmers' families need, and in turn creating a better market for farm produce. Once, when each household produced its own necessaries, there was much work but little want. This condition has been disturbed by modern division of labor, and while necessitating less work it brings new conditions of distribution which is the problem we have to solve. Every man should be assured work and a market for his product, at least sufficient to supply his own necessities in other productions not in his own line. He should also be secured from the necessity of sharing his product with a horde of speculators and middlemen.

To secure this storehouse exchanges should be established in every town, with modern banking attachments. Necessaries should be standards of value instead of gold and silver, and the government should regulate the price as a pendulum regulates the movements of a clock. A beginning in this direction has already been made by the inter-state commerce law regulating the prices of freight. The people are also doing something towards regulating salaries of officials. Doctors' and lawyers' fees should next be attended to.

Under this system the producer of a necessary would have, in seeking a market, only to deposit his goods at a storehouse and receive a bill of exchange, which would procure any other article deposited there—would, in fact, be money. In competition with a gold and silver currency this must come out ahead, for we can get along without gold and silver, but not without food and clothing. Besides, the producer would have no drummers or middlemen to support, only the expense of storehouses—all speculation would be relegated to the realm of fancy goods. Among the objections to this plan are, that one article might be produced in excess. Until all men think and look alike they would not all produce alike, and it would be for the general interest to have prices fixed fairly, that there should be no inducement to produce one thing in excess. If all necessaries were produced in excess we could get along with that better than with the present want and misery. It would be no worse to waste goods than to waste effort before they were produced.

Subscribe for Farm and Vineyard.

ENSILAGE VERSUS FIELD CURING.

Their Relative Merits as Reported by the Pennsylvania Experiment Station.

In a report of the Pennsylvania State college agricultural experiment station are given the results of extensive experiments in the relative merits of ensilage vs. field curing for Indian corn. In these experiments a well managed silo appears to preserve food with considerably less loss of dry matter than occurs in field curing under average conditions. On an average of all available experiments there seems to be no material difference in the digestibility of silage and fodder from the same corn.

Under the head "Yield of Food Per Acre" the bulletin says: The very moderate crop of 14.6 tons per acre contained 4,351 pounds of digestible food. Of this there were recovered in the silage 3,660 pounds; in the fodder, 3,338 pounds. A good crop of ensilage corn will furnish in fodder or silage fully two tons of digestible food per acre, or more than twice as much as a hay crop. There is no good reason for believing that a pound of digestible matter in silage is any more valuable than a pound of digestible matter in a well cured fodder. With the losses observed in this experiment the cost per 100 pounds of digestible food secured is about the same in the two methods. The detailed account of the experiments concludes as follows:

Regarded simply as a source of food, then, silage would appear to be, in most cases, cheaper than field cured fodder. The question of convenience, too, is an important one. There are seasons in which field cured fodder cannot be housed during the fall without danger of its spoiling. Under these circumstances the use of field cured fodder involves frequent trips to the field for the purpose of hauling in the fodder, and, further, the frequent cutting of the material. In many cases the convenience of having the material already cut and under roof would of itself be a very considerable advantage on the side of the silage. Furthermore, there is no question that succulent food in winter has a dietetic value, as is illustrated in the case of roots. Now, silage is a relatively cheap kind of succulent food, and it is probable that an addition of it to the daily ration of milch cows is of benefit as an appetizer. The considerations advanced seem to show that, on the whole, the more economical method of utilizing the corn corn crop is by ensilage, but either this method or the careful utilization of the cured fodder by cutting and shredding it is vastly preferable to a continuance of the old system of winter feeding upon hay and grain, or to the wasteful practices of throwing uncut fodder into the barnyard to be eaten or trampled by the cattle, or turning cattle into the stalk fields to pick up such fodder as they can secure there.

Things Said and Done.

A palace poultry car has been put on a western railroad for the shipment of live poultry to the eastern markets. The car holds about five thousand chickens. The claims for this car are that there is less likelihood of suffocation, and that with the improved system of feeding there is less shrinkage in weight and the advantage of holding the poultry for the market.

Farm Journal calls the cheviots the best breed of mountain sheep.

California Fruit Grower says: Never forget that a thrifty, symmetrical tree is much more desirable for planting in an orchard than big, overgrown stock.

The Polyantha roses, which bear their small double flowers in clusters, are what is known as perpetual bloomers, and are a good sort to have in one's garden.

THE DOCTOR IN THE HOME.

Sea Bathing, Its Good and Bad Effects—Shaving With Proper Regard to Cleanliness—Care of the Finger Nails.

By A. Atkinson, M. D.

For the Farm and Vineyard.

Sea bathing at the proper season is a healthful and invigorating exercise. It is stimulating in its effects, and is beneficial to persons suffering from sluggish circulation, corpulency, nervousness, sleeplessness and numerous other complaints. But there is so much ignorance and carelessness shown by bathers at our popular sea-side resorts that a few words of caution may be of service.

One should never enter the water without first putting a light cotton plug in the ears. Incurable deafness often results from waves striking forcibly on the side of the head. On entering the water it is better to plunge in at once than to wade in gradually. This will prevent any tendency to temporary congestion, which sometimes proves very serious. Bathing in salt water is a good tonic, but if the bather is weak he or she should not go into the water oftener than four times a week. Avoid the practice of sitting around on the beach after the bath in wet clothes. The body should be dried and rubbed thoroughly as soon as possible after the bath.

One should never enter the ocean immediately after a meal. The effect of a cold bath is to cool the blood, and digestion is greatly arrested in its work. If the bather stays in too long the period of coolness is prolonged, and the blood does not have the same opportunity to return to the surface again with a rush. It is the reaction that is so beneficial to the bather. A cold immersion and a short bath is the most beneficial. The longer the bath is prolonged the less stimulating does it prove. It is safer, however, to stay in salt water longer than in fresh, but it cannot be recommended in either case. Many adopt this pernicious habit, deluding themselves by the belief that by resting on the beach for a time they can plunge in the water once more and run no risk. Blue lips, chattering teeth and clammy hands denote to the passer-by that they have already been in too long. Children should not be allowed to remain in the water longer than five or ten minutes. Women may stand the bath for fifteen minutes, while strong, robust men will not be injured by staying in twenty or thirty minutes. The best time for bathing is about an hour before dinner, and just before retiring for the night.

CARE OF THE FINGER NAILS.

Common decency demands that finger nails should be kept clean, but modern society places a further injunction upon carelessness in this respect, and demands that finger nails should be trimmed nicely, and the whole kept smooth and attractive. Firm, well trimmed, pinkish nails add greatly to the beauty of a hand. It is not always necessary to follow the fashion in nails to make the appearance of a hand look beautiful, but it is necessary to take as much care of them as of the teeth. Children should be taught at an early age to clean the nails once or twice a day; to brush them with a nail brush, and to cut them properly when needed. The tapering finger cannot be produced if the nails are cut square off and kept so. This is often why working people have such blunt fingers. Their work breaks the nails off, and the fingers, not having any support, spread out and form ungainly looking digits. The habit of biting the finger nails is also a practice that produces blunt fingers, and it should be stopped at an early age. But not only for appearance sake should the nails be kept clean and shapely. Disease is often contracted and communicated through dirty finger nails. Bacteria are often lodged behind the finger nails, and they will be carried to other persons, or to other portions of the body, if they are not dislodged by means of water and a brush. Accumulated dirt will breed disease anywhere, and it is as liable to be developed beneath the finger nails as elsewhere.

In cleaning the nails, however, care should be taken not to separate the nail from the flesh. The nails grow from a little pocket or fold of the skin at their roots, and the fissure between the end of the finger and the nail can very easily be widened by continual scraping with the pen knife. A brush with soap is much better than a sharp knife to remove the dirt from this fissure. The nails should be washed with soap and water upon rising in the morning, and again in the afternoon if necessary. The nails should be trimmed so that they are left a little longer, or as long, as the finger. They can then be trimmed to a point, rounded, or cut square off to suit the owner. To keep the nails smooth rub them off with a towel and water, but never scrape them with a knife or file. If children will persist in biting off their nails, smear them with a solution of red pepper This will enable them to break the habit. Serious results sometimes happen from this practice. "Hang-nails" are often produced from it. The scarf skin will sometimes grow over the nail. This should be pressed back every time the nails are washed. Such a practice will make the nails look longer and better.

Money in the Business.

Tell Mrs. Wells that her, or any industrious person can make $30 a week in the plating business. For u-lars, address the Lake Electric Co., Englewood, Ill. A Plater costs $3. I am working now and know there is money in the business.

The acreage of bearing vines in California in 1890, was 155,272 acres, New York state comes next with 43,350 acres, then Ohio with 28,087 acres Missouri, 10,000 acres. These states are listed as the principal grape growing districts in America and manufacture the most wine.

You will do yourself and us a great favor, my friends, if, when writing to advertisers, you say you saw their advertisement in Farm and Vineyard. They always use Farm and Vineyard customers well.

Horticulture in America.

In a paper with the above title Mr. Jas. H. Laing, of Jno. Laing & Sons, London, on March 9 last, related to the Birmingham and Midland Counties Gardeners' Mutual Improvement Association his experiences while on a visit to this country last summer. A printed copy of the paper has been sent to us. After giving brief descriptions of the numerous places visited and of the S. A. F. convention at Boston he sums up his impressions as follows:

"I will now briefly give my own opinion of our American horticultural friends in business capacities.

"The Americans are a wide-awake people. They do not like to be behind the world in anything. I think the majority of their horticultural trade are smart, business-like men, quick of perception, not niggardly in their commercial purchases, though keeping a keen eye all the same after turning the dollar at as big a profit as possible. There seems to me to be also more fraternal intercourse with each other, particularly so at the Boston Convention. Social meetings, lectures, conferences and all other things pertaining to the advancement of horticulture, are carried on to encourage and educate the masses.

"Labor is the great detriment, even an ordinary boy receiving about 20s a week. This is a serious expenditure, so that many things are adopted to reduce the labor bill.

"The india-rubber hose is used largely for watering and damping down in the stove, greenhouse, rose, carnation, chrysanthemum and even orchid houses, thus doing away with the slow, though perhaps the more effectual method, namely, the watering can.

"Floral Societies, too, seem to be flourishing in all parts

"Florists' shops, as a rule, are elegantly and artificially arranged, a good deal on the Parisian method, though cleanliness and neatness are even more scrupulously carried out. The florists are very clever in their floral decorations of ball rooms, house ornamentations at receptions, &c., the New York *elite* of society especially spending large sums on these affairs."—*The American Florist.*

The Cosmopolitan is published at $2.40 a year, and is considered cheap at that; but look here, $2.00 gets the *Cosmopolitan* and Farm & Viveyard, both for one whole year if you send your order to Farm & Vineyard, Erie, Pa.

To Cane and Fruit Growers.

The attention of our readers is called to the advertisement of the Blymyer Iron Works Co., of Cincinnati, Ohio, which appears in this issue. Their Victor and Niles Mills and Cook Evaporators for Sugar Cane and Sorghum, have for many years been looked upon as Standard Machinery, in all sections of the world where cane is grown. The "Zimmerman" Evaporators for Fruits and Vegetables have the same world-wide reputation. Parties in want of Cane or Fruit Machinery will do well to send for catalogue and prices.

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Show this copy of Farm & Vineyard to your friends, and if they can't pay you cash down for a year's subscription, you can well afford to wait on them for a few weeks for the sake of securing this valuable washer at so small a cost.

Send us the names now with the cash and we will commence mailing the paper and ship the washer at once by Express, with explicit directions how to use it.

We have *thoroughly tested* this machine and know it will give entire satisfaction, furthermore the manufacturers, (who are responsible) authorize us to warrant every machine for five years. It will fit any tub and will do all kinds of washing with a saving of more than half the time and labor over the old rubbing process.

Send in your Clubs and give us the name of your express office. The charges will not be excessive as the washer is light and must in all cases be paid by the receiver. Address,

FARM & VINEYARD PUB. CO., Erie, Pa.

The Gardener's Assistant.

In setting out tomato plants use only thrifty, stocky ones. Cultivate them carefully and you will have a goodly return for your pains.

[illegible]nnac[illegible]w and fine hybrid water lily from [illegible]ance has just been received at the Central Park, New York, greenhouses. Its fine golden disk will probably help beautify the public ponds next year.

Pansies are supposed to be only spring flowers, but plant them in a cool, shady place and they flower the whole season through. Then, if covered with a mulch, they are on hand for early spring flowers.

During the past ten years America has become the greatest flower-bearing nation in the world. Where a dollar was spent for flowers a dozen years ago a thousand dollars are spent now.

The poor always love flowers, but the rich man of to-day has developed a well-defined mania for magnificent conservatories and beautiful and artistic flower-pots on his grounds.

When red rust appears upon raspberries or blackberries, the canes should at once be carefully cut away and burned.—*Fruit Grower.*

On Asparagus Culture.

There is probably more difference in the quality of asparagus that finds its way to the market than any vegetable shown. Yet even a bunch with grassy looking heads not much larger than a wheat straw finds a market as well as the finest sample grown, but of course at a relatively much smaller price than the best samples. All of which goes to show that asparagus is one of those vegetables that usually is not overstocked in the market, but is also partly explained by the different methods of serving at the table, to suit the taste of heterogeneous people. Another thing is, asparagus requires usually at least three years from the seed before it is ready for the market, else its supply would fluctuate like common vegetables, whereas, as a rule, a fair price can nearly always be depended on, except, perhaps, for a short time towards the last of the season when all other vegetables become more plenty. The French gardens are noted for asparagus culture, and ship vast quantities even to the London market, besides supplying their own liberally. What they do ship is always very large, and this is not obtained by "colossal" kinds as some would have one suppose who have seeds or plants for sale, but by giving each plant much more room to grow in. Here as in England, it is the more common practice to have beds planted as close as one foot apart in the rows, and not over eighteen inches between the rows; the consequence is that in a very short time the plants are crowding each other for room, and as in the case of every other crop, a much smaller growth is the consequence.

In France they are never planted at a less space than two feet apart each way, and for extra large specimens as much as from three to four feet is allowed. A good medium distance would be three feet in rows and eighteen inches between, which on large market plantations gives a chance to work a horse cultivator to clean from weeds. Many people imagine at these great distances a serious loss is obtained, but this is not so, as when the shoots have abundance of room to spread in, each plant produces a forest of stout shoots that would surprise those who dug up one of the plants for examination.

According to M. Vilmorin, this is radically different from the English, and which may also be said to be that followed in this country. For example, with them the bed is marked out in the spring and the position of each crown indicated by a stick. At each position a small conical heap of earth is formed and the plants are placed upon the mounds thus formed with their roots regularly arranged. The roots as the crowns are placed in position are carefully covered and the spaces between the mounds are filled with friable soil, sufficient being added to make the surface of the beds level.

In the autumn of the year the practice is exactly the reverse of ours. Instead of heaping manure over the beds when the stems are cut down, they remove the greater portion of the soil from the crowns to thoroughly expose the roots to the action of frost. They remain thus partly uncovered until spring, when a liberal supply of short manure is applied, while the soil removed in the autumn is returned to its place. In subsequent years the practice is not materially changed, except that finally a mound of earth is raised about each crown in the spring, so as to partially blanch the shoots as they raise. If white asparagus is not desired, then level culture is kept up. Whether in the extreme North our excessive winters might not injure the crowns, is a question, although the plant is perfectly hardy. But in the South, where much of the asparagus for early use now comes from, there would be no danger from this score. The new idea would plainly be worth a trial.—*Prairie Farmer.*

Politicians look at this if you are interested in farmer's politics, read the *Farmer's Record*, the official organ of Farmer's Alliances. The *Farmer's Record* is published at $1.00, but we will send you Farm & Vineyard and the *Farmer's Record*, both one year for 80 cents.

Care of Cattle in Summer.

By E. P. S.

For the Farm and Vineyard.

In mid-summer cattle need special attention. The heat and perspiration carry away from the animals certain salts and mineral substances that quickly reduce the health of their systems. If these are not artificially supplied they are more liable to disease and sickness of various kinds. The animals should have salt placed by them every day, so that they can get it whenever they feel salt hungry. If salt-meadow hay can be fed them daily this will largely take the place of clear salt. If this cannot be had, however, a piece of rock salt should be placed in some convenient place, under shelter, for the cattle to visit every day. Another good way to feed the cattle salt is to chop up small potatoes, and mix salt thoroughly with them. Cows and horses will both greedily devour such a mixture. Chopped hay is sometimes soaked in water, and then salt sprinkled over it. This makes fairly good salt-meadow hay, which every animal is fond of.

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* BEE * NOTES. *

Plants for Honey.

BY S. W. CHAMBERS.

For the FARM AND VINEYARD.

The idea of planting for honey has been gaining ground in this country, and quite a number of bee-keepers now sow alsike, clover, buckwheat, sweet clover, and Chapman honey plant for their bees to feed on. Even the Government has taken up the question, and sent out a great many pounds of seeds of honey plants, and the inference is that bee-keepers will plant for honey in the future more than they have in the past. But planting for honey alone will not pay, in my estimation, but when the clover or plants sown can be used for hay or some other purpose there is indirectly a double profit obtained. The average colony of bees forage over thousands of acres of land in search of their sweets, and the bee-keeper could not calculate on more than ten pounds of honey per acre from honey-producing plants. This would not pay anyone for the trouble, unless such plants were grown that could be utilized for other purposes.

A man must expect at least $15 per acre for the use of his land, otherwise it would not pay him to stay in the farming business very long. Alsike, clover and buckwheat are good honey-producers, and it would probably pay the farmer who keeps many colonies of bees to raise as much of this crop as convenient. Whole fields of such plants would give the bees quite a range, and plenty of sweets. This would be planting for honey indirectly, and it is probably the only way that it can be done profitably.

Alsike clover is probably the best plant that can be sown for this double object. In soils adapted to its growth, such as moist land or gravelly loams, it is a profitable crop for farmers to grow. In many places it is grown to the exclusion of red clover. The alsike is not "heaved" by the action of the frost in spring, as is red clover, and it is consequently good for pasture. It produces a profusion of blossoms of great value to the bees throughout the whole season, Alsike clover furnishes an aftermath in wet seasons, but it does not in ordinary seasons. When cut for seed, if not allowed to stand too long, the clover, after being threshed, is equal to timothy for hay. As it will spread and take care of itself, there is probably no crop so valuable for waste places.

The idea of sowing honey plants in small places, simply for the bees, does not seem to me to be a profitable undertaking. To be of any value there must be many acres of it, and then it should be raised with the idea of putting it to some other use in the end. Small patches might furnish honey enough to invite brood-rearing, which might, under such circumstances, prove detrimental.

But while speaking about honey plants, it may be well to mention a wild plant, called andromeda mariana, or more commonly, kill-calf, which cover the plains in certain sections of the country. The beauty of the blossoms of these plants is so attractive that many cultivate them for garden ornamentation; but for bees they contain a poison that turns the honey into a dangerous article of commerce. Wherever these plants are found growing wild the bees feed on the blossoms, and carry poisonous honey into the hive. Many have combatted this theory, but it is nevertheless a fact that bees will produce poisonous honey if permitted to feed on the blossoms of kill-calf, the azalea, the kalmia, or the rhododendron. It is seldom that honey is sent to market from sections of the country where these plants grow wild, but it is well that bee-keepers should understand the nature of the plants.

Summer Butter for Winter.

BY ANNIE C. WEBSTER.

For the FARM AND VINEYARD.

Butter made in the summer in a small dairy can be packed away for winter use if properly attended to. In making the butter the cream should be churned at least within three days after it is taken from the milk. If kept longer than that it becomes slightly tainted, which would prevent the butter from keeping well. While the cream is standing the temperature should not be above 55 degrees. The butter should be worked over well, so that all buttermilk is squeezed out of it. Pack the butter then in glazed stone jars, covering it with brine, and setting it away in some cool place away from all bad odors. The sooner the butter is packed in the jars, and the brine poured over it, the better it will be. If small jars are used, small quantities can be used in the winter without injuring the rest by disturbing it.

Don't subscribe to any paper till you have written to us for our prices. In most all cases we can give you two papers for the price of one.

Summer Complaints of Animals.

Slavering in horses is liable to be brought on at any time during warm weather. It is a disease that is due principally to errors in feeding. The saliva will run from the mouth in great quantities, and when hitched up the disagreeable froth will get over the harness, wagon tongue, and the animal's breast. The best remedy for this is a very simple and harmless one. When taken from the stable to be hitched up feed the horse with some cabbage leaves, or a head of cabbage. This will prevent the saliva from running so freely. The cause of the ailment, however, should be removed if possible. Sometimes this can be done by a change of diet, especially if the animal has been fed on a second growth of clover, or any rank fodder. If the flow of the saliva is not stopped in some way the salivary glands will get so weak in time that the horse will have no control over them.

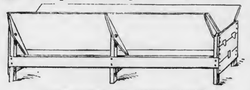
ACTIVE AGENTS WANTED in every village and township. You can make money during the winter months. Address for particulars, FARM AND VINEYARD PUBLISHING CO., Erie, Pa.

AN IMPROVED SHEEP RACK.

An Illustrated Description That Will Enable Any One to Make It.

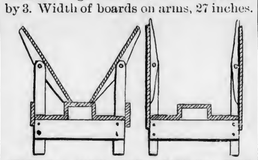
Following is a description of a sheep feeding rack, which was voted a good one at an Ohio Farmers' institute, and which was recently described in the Ohio Farmer, to which we are indebted for the accompanying cuts.

It is so constructed that when closed one can pass through the rack and distribute the grain in the triangles, preventing a few of the stronger sheep crowding after you, bunching and gobbling the grain, as they will do when poured into an old fashioned V shaped trough. After the grain is placed in the troughs the wings which are hung upon pivots are then turned down, and the sheep all pass to their grain at once, each one getting an equal portion; the wings which then slope together form the hay rack, the sheep drawing the hay from an opening at the bottom.



SIDE VIEW OF SHEEP RACK.

There are no stanchion slats to wear the wool from the neck and shoulders, no chance for chaff to work into the wool, nor for them to waste their hay. A small door hinged at one end of the rack makes it handy to sweep the dirt out of the troughs. This feeding rack was formerly held by a patent, and farm rights sold at $5 to $10; but the patent expired some years ago, and it is now free to be made and used by any one. The illustration shows how it is made. Height of posts, 31 inches; size 2 by 3 inches. Length of arms, 30 inches; size 2 by 3. Width of boards on arms, 27 inches.



SECTIONAL VIEW OPEN—SECTIONAL VIEW CLOSED.

Width of frame, 30 inches. Width of trough, 10 inches. Width of walk, 10 inches. Depth of trough, 4 inches. Distance from short end of arm to center of bolt, 13 inches. The bolt should be one inch from top of posts. Width of board on sides, 7 inches.

Early Potatoes.

When potatoes are wanted for early market a correspondent writing in The Republic says:

Great care should be taken to select a piece of land that is well drained, loamy and readily prepared in a good tilth. Potatoes need a deep preparation and a thorough cultivation in order to receive a vigorous growth. Get a good early variety. Early Sunrise and Charles Downing are both good early varieties.

Get seed of good quality. Good seed is necessary in order to secure a vigorous, thrifty plant. It is much easier to keep vigorous, thrifty plants growing than to induce a weak, sickly plant to grow well.

Prepare the soil well and then work out the rows, running the plow deep. Take a forkful of fresh manure from the horse stable and put where each hill of potatoes is to be planted; put on this about two inches of rich, fine soil and then drop the seed on this and cover three or four inches deep, at least, pressing the soil down well upon the seed. Keep the soil in a good tilth so as to secure vigorous growth. Thin out as soon as the plants make their appearance above ground, leaving not more than three good vines to each hill. The benefit of the manure is that it keeps the soil somewhat warmer and also affords good drainage—two items in securing an early germination and start to grow. In this way a supply can be obtained earlier than by almost any other way of outdoor planting.

Potash for Wheat.

In the experiments made by Sir John B. Lawes and Dr. Gilbert at Rothamstead for more than forty years, potash seems to have had no effect as a fertilizer for wheat, except when combined with both phosphoric acid and nitrogen. In the experiments now in progress at the Ohio Experiment station potash seems to have no effect on wheat, whether used alone or in any combination. At the experiment station of Kentucky potash has produced a very marked increase of crop when used on corn, hemp, tobacco and potatoes; but here again it fails to increase the yield of wheat, whether used alone or in combination. The Ohio and Kentucky experiments are as yet in their infancy, and it is probable that as the soil becomes more worn even wheat will show some benefit from applications of potash; but the present indications are that this substance is seldom needed in fertilizers intended for this crop. It may be that the clover following the wheat will make good use of the potash, but this is a point which has still to be determined by experiment.

Poultry Notes.

The Poultry World says: Do not attempt under any circumstances to keep 500, or even 200, adult fowls in one flock. Broods of half grown chickens may be united in the fall until there are 500, when there is an unlimited range, but grown fowls never. In one yard there ought not to be kept more than from twenty to fifty hens, even if the yard is large.

In raising poultry for profit you must first consider the surrounding circumstances, the amount of capital to invest, the space of ground to be occupied and the amount of help available.

American Agriculturist tells that clabbered milk is a very nutritious article of food for hens and growing pullets. It is usually fed with bran, well mixed together.

As a general rule it will be found a good plan to introduce new blood into the flock every year, either by getting new roosters or a setting of eggs from a reliable breeder.

All About Swine.

Give the hogs plenty of slops.

A little corn scattered in the field will give the hogs a good start.

When we begin to feed the pigs to fatten them we will get more growth and better meat to make the food one-fourth bran, three-fourths by weight of corn or rye.

Give all the hogs shut in pens some grass, clover or green corn. Store hogs will live on this sort of food and do well. The green corn with the ears on will fatten them.—Western Swineherd.

Horticultural Hints.

Callas will bear almost any amount of stimulating.

Begonias are particularly sensitive to stimulants, and these should be used but seldom on geraniums; but to roses, fuchsias, carnations, heliotropes and others they may be given with more safety.

Remember that hens like gooseberries, which they begin to eat as soon as the crop is out of bloom. Moral—Plant at a distance from their runs.

Prune the gooseberry bushes the same as currants.

ORCHARD AND GARDEN.

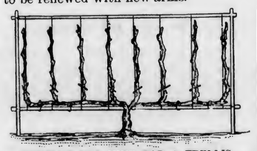
HORTICULTURAL SUBJECTS CONSIDERED IN A PRACTICAL MANNER.

Simple Directions for Pruning and Training Grape Vines on Stakes, Trellis or Arbor—Rules to Be Observed Regardless of the Special System Adopted.

Every mild day when the vines are frozen one may prune and make cuttings. In pruning there ought to be an object in view, as well as a system. If the method of training be on stakes, Orchard and Garden advises the reversed system: select canes as low down as possible, and not more than two canes to full bearing vines, like Concord about four feet long, and for such as Delaware not more than one cane about two feet long. In pruning for a trellis, prune so that two canes will start from the main stock about as high as the lower wire, then train one cane each way on the lower wire. This wire should not be more than two or two and a half feet high.

In spur pruning these two lower canes are allowed to remain on the lower wire, forming arms, and the bearing canes from these arms form the spurs. Cut back the bearing wood from the arms to two buds each, and every year thereafter prune these spurs to two buds so as to keep bearing spurs as close to the arm as possible.

When vines are pruned for an arbor, select one strong cane, grow it to the height of the arbor and cut it off at that height, and start out canes from it to distribute over the arbor according to the form and size of it. These form the arms on the arbor, and should be spur pruned the same as those above mentioned. This may be continued from year to year until finally they may have to be renewed with new arms.



PRUNING THE VINE FOR A TRELLIS.

In selecting bearing wood, says the authority quoted, do not prefer the most rampant large canes, as they are not the best, the buds not being well developed, but select those of medium size, with large, full buds, and then there will be large bunches and fine berries. When vines grow too strong prune longer, and when they grow too feeble prune shorter. This is a general rule and should always be observed in pruning, for whatever may enfeeble a vine, whether from lack of constitution or overbearing, it must have rest and bear less until it recuperates.

Forcing Lilies of the Valley in Moss.

M. Hesdorffer, in Triers, ties nine pips, each wrapped in moss, to a bundle with Raffia fiber, packs these bundles close together in his bench, and waters freely. He claims to grow his pips easier thus fashioned, as the warmth penetrates easily through moss, which retains moisture a great deal longer, and which proves a far cleaner material than sand or soil. The Florist's Exchange explains that the fiber generally rots during the process, while moss clinging to the roots admits of removing the single flowering pips to a market pot from the bench without disturbing its neighbor, and thereby saving a number of pips which are later in flowering and require more cultivation. "Close up file" is all that is required when pips have been removed. He says that he finds moss growing more uniform in the results of crop.

Currants for Profit.

The demand for currants is increasing, these being largely used now for jelly. This fact, together with the ease with which the fruit can be marketed, ought to increase its cultivation. Some growers, bearing in mind that both the red raspberry and currant like partial shade, grow these in the same rows, that is, they plant alternate stools of each. Experience serves to indicate that the Versaillaise and Fay, as well as cherry, do best with severe pruning, keeping them in a tree form or with three or four main stalks. The smaller currants may be grown with more stalks. Weak suckers must be kept out and very old wood cut away. The currant likes mulching. It prefers strong clay soil, full of moisture, but well drained.

Hints About Raspberries.

Says Rural New Yorker: We do not know of a better red raspberry than the Cuthbert. This is late. For early we must name the Marlboro, though it fails in some localities. For caps we may mention Hilborn, Souhegan and Tyler, while advising a trial of Palmer, Progress and Lovett. Caps for garden culture may be planted four feet apart each way. For an acre we should set them about six by four feet. The reds will not require quite so much space, say six by three feet.

Powdery Mildew of the Rose.

Opinions as to the cause of this pest are various and contradictory. Charles E. Parnell says that extremes of drought and moisture of temperature, cold draughts or any other cause that will impede the flow of the sap will place the plant in that condition fitted to develop mildew, as it is a fungoid growth, the seeds of which are ever present in the atmosphere awaiting a suitable place for their development.

Here and There.

The Goose King pear thrives best in good, strong soil, high and well drained.

The New Orleans Times-Democrat calls attention to the fact that the Kieffer pear succeeds better and produces larger crops of fruit in the Gulf States than it does at the north. In planting either the Kieffer or Le Conte plenty of room should be allowed.

F. L. Wright says: Never prune the short spurs from pear trees, as all the fruit is borne upon them.

Items in Violet Cultivation.

A New York correspondent, writing to The Florist's Exchange, says:

Violets should be planted in ground that has a fair drainage, so that the rain will penetrate through the roots, and leave the top of the ground and plants dry in a short time. I never plant violets in the shade, but rather where they will receive the benefit of rain, dew and sun. Keep them warm, but don't kill them with kindness. Half of the failures in violet growing under glass comes from placing them with other plants. If you want success place them in a house or frame by themselves. They don't care for company.

Items in Strawberry Culture.

In a report sent out from the Maryland station on eighty-eight varieties of strawberries, the following appeared:

For very early, the Coville and Arlington are good; the main crop, Crescent and Cloud, and late, the Eureka and Stayman. Warfield was the best berry grown during the season, and Bubach No. 5 gave a fine crop. Under comparison of matted rows versus hills it was found that with the former the yield was larger and berries better.

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$5.50 Do not confound these with cheap machine harness. If you want such, our machine—the best in the world for the money—costs $5.90.
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ERIE, PA., JUNE, 1891.

Number 1. Volume V.

The Farm and Vineyard is now in its fifth year of success, and our aim is to make the fifth volume the best ever offered to our horticultural and agricultural friends. We are still taking subscriptions at 25 cents a year, but shall soon go back to our regular rate, 50 cents per year.

Catalogues, etc., Received.

Descriptive catalogues of new and rare plants, and price list of hardy perennials, from Messrs. Pitcher and Manda's United States Nurseries, Short Hills, New Jersey.

A Book of 500 Pages

On treatment and care of domestic animals, horses, cattle, sheep, dogs, hogs and poultry, sent free. Address, Humphreys' Veterinary Specifics, corner William and John streets, New York.

Preserving.

A writer in *Orchard and Garden* gives the following timely hints on preserving:

From strawberry time on, throughout the summer and early autumn, the thrifty housekeeper sees few days when there is not some fruit to be preserved. Oftentimes the hottest days must be spent in this work, even though the house be full of company, for the fruit must be attended to then or lost.

Before beginning to preserve, be sure that your table is well supplied with fresh fruit. Perhaps none of our readers need this caution, but it was once the writers lot to visit in a family where twenty quarts of strawberries were canned and not one appeared on the table. Canned peaches were served at supper! There may be a few people with whom fresh fruit does not agree; but for the majority it is agreeable and wholesome. Then does it not seem absurd to spend time and strength preserving fruit which the family need at once?

To eat canned strawberries in September, while one is busy preserving peaches for next year's strawberry time, seems a wast of effort. If the family really prefer to have cooked fruit, why not cook each fruit in its season, and avoid, so far as possible, the inevitable labor connected with air-tight cans. We have used the word preserving in the general sense of saving from decay. The commonest methods at present seem to be jelly-making, canning and pickling; but there are other attractive ways in which fruit may be kept for the winter table.

Jam is not as generally made as it should be, for all kinds of berries may thus be easily preserved. The English are far more fond of jam than Americans, and use it constantly on their tables, considering it very wholesome. In this country, comparatively few housekeepers make it. We find the English label on most of the jams sold in our markets, yet it would seem very easy to supply the demand with the home product. Why do not more of our American women who are obliged to earn money at home, make a business of preserving?

Fine, home-made jellies, canned fruit, pickles, jams, indeed nice preserves of almost any kind, are always in demand at good rates. To be sure there is some hard work about it, but that is true of almost anything that yields good results, and it is a more wholesome occupation than sewing.

Our Sewing Machine Offer.

We have made arrangements by which our subscribers, only, can purchase one of the above sewing machines for the small sum of $18.00. This is one of the most approved styles of lock stich sewing machines, and is sold in different parts of the country at from $40 to $60. These machines are well made and handsomely finished with black walnut furniture, as shown above, and each machine contains a full set of the latest improved attachments, instruction book and the manufacturers guarantee for five years.

We will send to any address in the United States the *New York Weekly World* and the Farm & Vineyard, both one whole year for a dollar bill. Now is your time to subscribe.

Special Clubbing Offer.

If you wish to take any other paper or magazine in combination with Farm and Vineyard, it will pay you to write to us and get our prices. We have secured special rates for subscribers of Farm and Vineyard, which, if taken advantage of, will allow you, in most cases, to get two papers for the price of one.

The following are a few of the leading papers and magazines. A complete list will follow:

	Price	Farm and Vineyard.	Our Price for Both
The Rural New Yorker, price	$2.00	$ .50	$1.90
" American Garden, "	2.00	.50	1.90
" Farm Journal, "	.50	.50	.50
" Chicago Weekly Times "	1.00	.50	1.00
" American Rural Home "	1.00	.50	1.00
" Amer. Sheep Breeder, "	1.00	.50	.90
" Cleveland Leader, "	1.00	.50	1.00
" Yankee Blade, "	1.00	.50	1.00
" Fanciers Review, "	.35	.50	.50
" Buffalo Weekly Express "	1.00	.50	1.00
" " Sunday " "	2.00	.50	1.75
" Farmers Record, " (Devoted to Farmers' Organizations and Farm Topics.)	1.00	.50	.80
" N. Y. Weekly World, "	1.00	.50	1.00
" Cosmopolitan, "	2.40	.50	2.00
" Ladies Home Companion "	.50	.50	.65
" Western Garden, "	.50	.50	.50
Our Country Home, "	.50	.50	.50

If you have anything for sale advertise in the Farm and Vineyard. We guarantee good results, provided you offer the right articles. Many of our readers write and inquire where they can purchase full blooded cattle, poultry, pigeons, dogs, sheep, pips, etc., hence our offer to insert breeders' cards at the low rate offered on page 5.

The Best Chrysanthemums in England.

The yearly analysis of the leading chrysanthemum blooms shown at the numerous English exhibitions is always interesting to those who make a specialty of this flower everywhere. While American varieties are becoming very numerous and taking year by year a leading place in our exhibitions, no grower can afford to neglect the varieties among which our English friends find the prize-winners. Comparatively little interest seems to be taken here in the Chinese incurved section, no stand of these worthy of notice having ever been seen at any of our shows. As a matter of interest we note the leading twelve varieties of 1890 as English exhibitions in the order of their rank: Miss M. A. Haggas, Miss Violet Tomlin, Empress of India, Queen of England, Lord Alcester, Golden Empress of India, Jeanne d'Arc, Lord Wolseley, John Salter, Princess of Wales, Prince Alfred, Golden Queen of England. As compared with former audits, this shows a falling off of Empress of India, which variety has occupied the foremost place for a number of years. The leading Japanese varieties show the usual shifting of places. The first dozen were: Etoile de Lyon, Sunflower, Avalanche, Edwin Molyneux, Madame C. Andiguier, Madamoiselle Lacroix, Val d'Andorre, Maiden's Blush, Jeanne Delaux, Stanstead Surprise, Mr. Ralph Brocklebank, Stanstead White. Eight of these varieties are introductions of 1886 and later. Whether the new kinds are really so superior to the older varieties, or simply that their novelty causes them to be grown more largely, only future exhibitions will show. It is curious to observe almost the entire absence of American varieties from the list of sixty-three varieties, Volunteer (Henderson) being No. 45, and Florence Percy (Allen) No. 46. The latter variety, like Mr. Ralph Brocklebank, is not highly esteemed with us, as it always comes very thin.—F. N. G. in *Garden and Forest.*

The *Rural and Poultry World* is a very neat and practical journal, published at 50 cents a year. Anticipating the wants of our readers, we have made arrangements to supply the *Rural and Poultry World* and Farm & Vineyard, both one whole year for 50 cents.

Light Hearts and Plenty Money.

I have completed my first week with my Plater, and have $24 25 clear money. I am charmed with the business. I bought my Plater from the Lake Electric Co., Englewood, Ill., for $3, and feel confident if people knew how cheap they could get a Plater and how much money they could make we would see many more happy homes. It is surprising the amount of tableware and jewelry there is to plate; and if persons now idle would get a Plater, they would soon have light hearts and plenty money.

Our aim is to study the wants of our subscribers, and all our subscribers want seeds, bulbs and plants. You can have them mailed direct from the most reliable houses in this country. Purchasers of fifty cents' worth and upwards receive the Farm and Vineyard one year free.

World's Fair Notes.

The Holstein-Fresian Association, one of the most prosperous cattle breeders' associations in America, has appropriated $10,000 to be paid in premiums on its cattle shown at the Exposition.

The American Jersey Cattle Club, at its annual meeting recently in New York, appropriated $10,000 to secure a proper exhibition of Jerseys at the Exposition.

Cattle breeders of Germany are taking great interest in the live stock feature of the Exposition. Chief Buchanan is receiving many letters of inquiry about regulations for showing breeding cattle. J. F. Sarg, of Nussdorf, Germany, writes that he represents the largest breeders' association on the Continent—the Cattle Breeders' Association of Baden—and that he intends to send to the Exposition a herd of the celebrated Simmenthal cattle.

Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 50 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

Vineyard Enterprise.

The Boyer Diamond Vineyard Company, limited, recently organized at Farmer Village, Seneca county, N. Y, have bought a hundred acre tract of the celebrated Boyer farm on Cayuga lake, in the grape belt of eastern New York.

If you have any article you wish to sell, advertise in Farm and Vineyard.

Late Pruning.

If your grape vines were not pruned early in the season the work may be safely done after the vines have made a new growth of from three to six inches. By that time the sap will have thickened and the vines will not "bleed," and the embryo clusters being in sight, the operator can determine the number of clusters each vine may be permitted to bear.

Specialty in fruit growing can often be made very profitable, but the qualty must be of the very best.

Stock Yard Items.

By E. P. Smith.

For the Farm and Vineyard.

Bloating can easily be prevented in cattle; but it occasionally occurs on the best regulated farm. It is a simple complaint, but many animals are lost by not attending to it in time. The best remedy is a teaspoonful of chloride of lime; two hours later a spoonful of turpentine, and one pound of glauber salts next day. Each should be given with a quart of water. In the spring if a pound of glauber salts is given each cattle before turning it out to pasture bloating will often be prevented.

Farm and Vineyard is one of the periodicals mentioned in Geo. P. Rowell & Co.'s Book for Advertisers.

New Fruits.

Extract of paper by C. A. Green read before the Western New York Horticultural Society.

New fruits are not unmixed blessings, as the inexperienced may plant too largely, or be too far carried away by the enthusiasm of the originator and expect too much of a new candidate.

New fruits are profitable to the public, as is shown by the Concord grape, whose value to this country, I believe, has been at least fifty millions of dollars, and will alone counterbalance the greater part of the loss experienced by the buyers of worthless sorts. In most cases, new fruits have not enriched the originators.

The skill required in originating a new variety by cross fertilization, the patience in waiting for the fruiting and in nursing for years those that are of no value, is different from the ability required to disseminate the selected variety. It is not just that the man who labors for a lifetime, originating new fruits, has no protection, being virtually robbed of his reward.

The seedlings from our improved sorts are far more likely to give good results than those gathered from the woods, as is shown on nearly every nurseryman's grounds. Several young men have asked what they should do on a farm, and I can advise nothing more promising than fruit-growing, combined with the sale of plants from the various fruits, and especially valuable new ones.

As we progress with new varieties, there will probably be attempts made to originate seedless sorts, as there is a tendency in all fruits, as they improve in quality, to have less seed; many of the best pears have meaty cores, which may be entirely eaten—while coarse-flavored sorts have a viscous, disagreeable core, and are at all times progressing toward better qualities, and this is now coming to be the first consideration as to the value of a new sort.

We are still offering the premiums previously offered. Don't you think you could get us a club if you tried.

The new Thompson seedless grape is likely to succeed the Cornith grape from which our imported currants are made. The Thompson is a larger and finer flavored grape, perfectly seedless, is more fleshy than the Cornith, does not burn on the vine, is prolific and a rapid dryer. Three and a quarter pounds of the ripe fruit make one pound of commercial currants. It yields the first year about fity pounds to the vine, second year from sixty-five to seventy pounds, the third year from seventy to seventy-five pounds and the fourth year from one hundred to one hundred and fifteen pounds. The grape commends itself to growers for many reasons. It can be stemmed readily by machinery, does not need facing in packing, and can be either sacked or boxed for the trade.—*Field and Farm.*

Subscribe for Farm and Vinkyard.

The beautiful pictures, Christ before Pilate and Christ on Calvary, are still offered. Either picture and a year's subscription to this paper, for only 50 cents.

A very neat and practical monthly is the Farm and Vinkyard. So says the Fanciers' Review, published at Chatham, N. Y., and we give them credit for knowing a good thing,

Roup and Its Treatment.

Roup begins with cold, followed by inflammatory symptoms; then comes the discharge with swelling of eyes, face, loss of appetite, etc. As the disease is highly contagious and, once well under way, incurable, it is better, unless the bird is very valuable, to kill it at once and so stop the spread of the contagion. On first indications of the sickness isolate the birds; keep them warm and dry; feed soft food; add a little Douglas mixture to the water. Wash the head with tepid water and give daily one grain sulphate of copper. Recently reports have come regarding the efficacy of spongia (a homeopathic remedy) for roup. P. H. Jacobs, editor of The Poultry Keeper, is credited with having first recommended it. Spongia can be obtained at any homeopathic pharmacy, the "mother tincture in the third decimal," and the quantity four drops to a pint of water is the prescription. The fowls take it in place of the usual drinking water. We give this formula so that any reader who desires can test it.

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FARM AND GARDEN.

OBSERVATIONS AND EXPERIENCES IN LIFE ON THE FARM.

The Various Clovers and Their Several Requirements—A Sketch of the Crimson Clover About Which Differing Opinions Were Expressed Last Season.

Alfalfa, otherwise known as Lucerne, requires a rich, deep soil, and in such will produce several crops every season. From ten to fifteen pounds of seed are required to the acre.

Alsike resembles in growth, duration, etc., the red clover. It thrives well in cold, wet and stiff soils. The rule in seeding is ten pounds to the acre.

CRIMSON CLOVER.

Kidney vetch, or sand clover, is a deep rooted, herbaceous, hardy perennial plant, valuable for dry sands and inferior soils, upon which red clover will not thrive. It is useful in mixture for dry soil.

Red clover is a perennial but of very few years' duration. It is nutritious and voluble in moist locations. The large red or pea vine clover, also known as English cow grass, is a reliable sort for plowing under. White clover is especially prized for lawns and pastures.

Crimson clover, a sketch of which is here reproduced from James M. Thorburn & Co.'s annual descriptive catalogue for 1891, is an annual with crimson flowers, about which many reports were made last season, some exceedingly commendatory, while others were not favorable. Thorburn says that "sown late in the summer it furnishes an early green fodder the following season; it is also excellent for soiling." Beal says, "It belongs to a warm climate, and is not so popular at the north as is red clover."

Japan clover is a perennial, voluble only in southern localities, where it thrives in any soil. It makes a fair hay, and stock eat it readily when green.

Potato Experiments.

Of 122 varieties and seedlings of the potato tested the past season at the Wisconsin station, the following ten were most productive, yielding in the order named: Seedling from C. E. Angell, Rose Beauty, Monarch, Duplex, Late Beauty of Hebron, Mullaly, Alexander's Prolific, Seneca Red Jacket, White Beauty of Hebron and Wisconsin Beauty. Placed in the order of their table quality, these varieties would rank as follows: Alexander's Prolific, White Beauty of Hebron, Late Beauty of Hebron, Duplex, Monarch, Wisconsin Beauty, Seneca Red Jacket, Rose Beauty, Mullaly, seeding from C. E. Angell. Both with cuttings and whole tubers, the largest merchantable yield came from the heaviest seeding, though the increase of merchantable yield was by no means in proportion to the increase of seed. The proportion of small potatoes increased with the increase of seed. The smaller whole potatoes gave inferior results to the smaller cuttings. Two single eyes in a hill yielded decidedly more than one, without a corresponding increase in small potatoes. No loss in yield followed planting in hills as compared with drills. The results were clearly opposed to cutting off the "seed end" of the potato before planting. No advantage followed sprinkling the cuttings with land plaster before planting.

The New Carnation, Paul Engelheart.

The new carnation, Paul Engelheart, is without question the best border carnation of the clove section yet introduced. The color is the same as in the old crimson clove, but the flowers are almost twice the size, and, if possible, more fragrant than those of that good old garden plant. The great advantage claimed for Paul Engelheart is that the stems are stout and well able to support the large flowers, and this is so even when cultivated under glass.—Garden and Forest.

Garden Beans.

Of all the garden beans the lima appears to be the general favorite, a position that seems well deserved on account of its fine cooking qualities and rich flavor. Of the bush beans I give preference to the golden wax bean. It is a thrifty grower, with long, brittle and stringless pods, and comes in early. It is very tender and has a peculiarly pleasant flavor when cooked. On account of the delicate nature of the pods they are more liable to be unfavorably affected by bad weather than some of the other varieties. For two seasons past I have raised in the garden for green beans what is to me a new variety, called in Gregory's catalogue "Snowflake field bean." It is an early bean, the pods growing thickly on rather low but stiff stalks that keep them pretty well off the ground. The matured beans are rather small, but of excellent quality when cooked. My experience with it, however, has been mostly as a green bean for summer use, for which purpose the pods are very tender, making it an excellent variety for a garden string bean, writes a correspondent in The World.

Untrained Raspberries.

An English horticulturist has the following to say about raspberries: Give raspberries a rich, deep soil thoroughly worked before planting. Do not crowd the rows together, let the sunshine and air work in among them freely to strengthen and ripen the wood, and then it matters not how much the canes are shortened, there will be plenty of fine fruit. In practice, where no training is done, it is found best to leave the canes about three feet long, and for a number of years I worked two plantations, one trained to wires and the other left without training, and I was so convinced that as good results can be obtained on the free and open system as tying them in bunches to stakes or training them on fences of wire that I cleared away the wires and stakes.

Care of the Lawn.

The lawn requires a good dressing of fertilizer as often as every second or third year. Fine old compost is perhaps unexcelled for the purpose, but rank, raw manure is objectionable, on account of both odor and looks. In place of it we would advise the use of bone dust and wood ashes, or some good, complete fertilizer. A special lawn dressing may be made by composting dry swamp muck with ashes and bone dust, or potash salts in place of the ashes.

Protection of Peach Buds.

After another year of earnest endeavor at the Massachusetts station to find something to protect the buds from the effects of the cold at this station the management acknowledged themselves baffled. They have demonstrated that large peach trees can be loosened at the roots and laid down on the ground for winter protection, and be again set up successfully, but have thus far failed in saving the buds.

NOTES FOR STOCKMEN.

IF YOU HAVE A BAD TEMPER DON'T BE A TEAMSTER.

How Not to Drive a Team—A Nervous, Fiery Man Should Never Undertake to Teach a Team to Draw Heavy Loads. Better Draught Horses, Better Drivers

I have a sand bank on my farm, and besides selling sand to several small villages sell to farmers for miles around. We know that sand is very heavy, averaging about 3,000 pounds per yard, and the ground is often soft in the bank. I have learned to watch a new customer and his team closely. The amount that a team will pull out of the bank varies from one-half yard to two yards and a quarter. Probably one man with a very common looking team will load one and a half yards, carelessly take up his lines and go out without any effort on the part of his horses.

Perhaps the next team will be much larger, better looking, with good harness, etc., but before the man gets one yard loaded he will begin to look for a good place to get out, complain of the ground being soft, finally put on a few more shovelfuls, then take a large whip, get on the load, stop the team two or three times until they get as nervous as the driver, then halloo at them and probably strike them. The chances are that they will go at it in seesaw style, until they will refuse to pull or else break something. We have had singletrees scattered all around simply because the teams were not properly driven. I have told parties to take off four good horses, and then I have put on one good team and pulled the load out with ease. What is wanted is to learn how to use their power, and to do it without getting excited.

A nervous, fiery man should never undertake to teach a team to draw heavy loads. I have seen men refuse to load more than one yard, then begin to worry their team as soon as out on the road, probably trot part of the road home and all the way back, and at night their team would show more fatigue than if they had hauled one-half more and let them take a more natural gait. One of the first things to teach a team should be that if they could not move a load they would not be whipped; the next thing to learn is how much your team can pull, and how fast they can travel and not overtax their strength. It would be a surprise to many to see the farmers of this neighborhood undertake to pull a heavy load, and it would often be difficult to decide which is the most needed, better draft teams or better trained drivers.—C. J. in National Stockman and Driver.

Slaughtering Along the Line.

Notwithstanding the numerous wrecks of range slaughter plants that stand the country over, as monuments to men and means embarked in the unsuccessful enterprise of slaughtering beef on the ranges for the markets of the country, still we always find men and money ready to undertake the re-establishment of deserted plants. There is probably no doubt that the idea is feasible, but there has heretofore been a screw loose somewhere.

The fault, it strikes us, has been that plants have not been able to secure the amounts of cattle necessary for slaughtering as required by the market, and this was due to the refusal of rangemen to sell, from day to day, at the prices of the Chicago market minus freight. Can this obstacle be overcome? That is the question, and in Montana it is to be essayed again, and even at the abandoned plant of our marquis, at Medora.

A special to The Butte Miner gives the information that there was a son of a duke at the Richelieu hotel, Chicago, last Saturday, who signed himself Montague, London, England.

Said he:

I am going to try and do what the Marquis de Mores tried and failed to do, that is to establish beef packing establishments along the line of the transcontinental railroads, including the Canadian Pacific, Great Northern, Northern Pacific, Union and Southern Pacific.

I fully understand that the enormous prestige and great wealth of Armour and other meat packers will be exerted against me, but I am thoroughly acquainted with the stock business and am prepared to bide my time, and run for several years, if need be, at a loss.

The mere force and weight of money will do most things in this world, and as I have that, coupled with practical experience, I have the utmost confidence in the undertaking. Now that I have settled upon the plan I feel no hesitancy in speaking.

I will go first to Medora, the town De Mores built, and if there is anything left that I can use I will buy it. By the middle of May I expect to have eight establishments in progress of erection. There will be one near Pasco, Wash., one at La Grande, Ore., one each near Livingston, Laurel Junction, Big Horn (on the river of the same name); Blatchford, on the Powder river; Hoyt, on the Yellowstone, all in Montana, and at Medora, on the Missouri.

I expect to do all the business of the west almost from the first, and also some considerable foreign business. My friends in England will of course attend to my foreign connections, and if all goes well we will in course of ten years control the entire beef market of the world. The business will receive my constant personal attention. — Stock Grower's Journal.

Ducks that Pay.

One of the largest duck farms located in the New England states has been conducted in such a manner that today it earns in net cash for its owner over $4,500. The sales the past season have run to nearly $7,000. The incubator is the power, with its next friend, the brooder, while the duck does her part as the egg producer, and does it well. The average number of eggs to each duck during the year has been 157. This is an average among 2,000.—Southern Live Stock Journal.

Cure for Bone Spavin.

R. G. A. writes to The Rural New Yorker:

Take soft soap and stir it full of fine salt and put it in the spavin twice a day, rubbing it well until it becomes sore; then wash it with castile soap and water until it is thoroughly healed; then use the soap and salt until sore again; then wash and keep on doing so until it is healed without a bunch. It will take time—from four to six months. Driving will not hurt the horse at the time of using the application. I have been using this on my horse now three months, and the bunch is growing smaller all the time and the horse is not so lame as it was. There have been horses cured entirely, or I should not have recommended it.

A Milwaukee man had a horse that no blacksmith could shoe on the hind feet. At length the bright idea was hit of chloroforming the horse and putting on the shoes. This was done. When the beast came to himself he nearly kicked his hind quarters off in the attempt to get rid of the shoes, but it was no go. Science was too much for brute force.

ORCHARD AND GARDEN.

SUGGESTIONS ON THE CULTURE OF ROOTS, FRUITS AND FLOWERS.

Conditions of Success in Transplanting Vegetables Briefly Named, with Minute Instructions for Shortening the Tops and Roots of Cabbage, Celery, Etc.

An essential agreement in transplanting is that the soil be moist enough to crumble easily; hence if it is dry it must be moistened by artificial watering. Puddling the roots—that is, dipping them in thin mud—is practiced by

PLANTS PROPERLY TRIMMED.

many just previous to planting. Others contend that dipping the roots in clear water immediately before setting out the plants is not only cleaner and more convenient, but equally efficacious. Of this opinion is T. Greiner, the author of that practical book, "How to Make the Garden Pay," recently published by William H. Maule. Firming the soil around the roots is also advocated by Mr. Greiner, who, however, advises drawing some loose soil up over the firmed soil around the plant. Cloudy weather permits of setting out plants at any hour, but on sunny days it is better to wait until after 4 o'clock p. m.

Another sensible precaution advised by Mr. Greiner is that of trimming or shortening in of the tops of cabbage, celery and other plants previous to setting these out. He also believes that celery plants with excessively long roots should have the tips cut off with a sharp knife. Plants treated in this way, after being set out, appear as illustrated in the cut, which is a reprint from his book, Fig. 1 being a cabbage, Fig. 2 a beet and Fig. 3 a celery plant.

New Types of Chrysanthemums.

In a paper read by John Thorpe at a weekly meeting of the Massachusetts Horticultural society he said: The interest in chrysanthemums will exist so long as new types are produced. We recall the interest which that beautiful variety, Mrs. Hardy, and her followers, created. Now we are evolving a type which is certain to create further interest. Its distinctive characteristics are the marked extension of the ray florets beyond the body outlines of the flower. Examples are violet rose, Ada Spaulding and Flora Macdonald. The ligulate petals are broad, numerous and incurving. Perhaps a good name for this type would be "American." Yet another type, the original of which is Laciniatum, one of Fortune's importations from Japan, is being developed in all colors and in the largest sizes. Still another form, distinct in every particular, is one where the flowers present two distinct surfaces, the upper surface being composed of broad reflexed petals, and the lower surface being a mass of narrow segments which extend from either side of the base of each floret. These are only a few of the newer forms waiting to be brought forth.

Transplanting Trees.

There is no question that the boast of some planters that they have transplanted trees successfully every month in the year is a true one. This, nevertheless, does not alter the fact that there are right and wrong seasons for this work. The wrong ones are midsummer and midwinter, and the right ones spring and fall. In March, April and May, and again in August, September and October, the vital forces of the tree and temperature of the soil and air are more nearly adjusted than at the extreme seasons of cold and heat, and unite, therefore, more readily to promote that root action which is of paramount importance in all transplanted trees. Whether spring or autumn is best remains a question to be settled by circumstances. As most readers know, an early, dry and warm summer tries the vitality of all kinds of newly transplanted trees and shrubs, unless it is practicable to supply an abundance of water. On the other hand, an early and severe winter is hard for trees moved in autumn. Each one must therefore plant to suit the climatic conditions of his own special locality.

The Cabbage Louse.

Finely powdered tobacco is an excellent remedy for the cabbage louse, and has also the advantage of being a good fertilizer. It also prevents the white butterfly from laying the eggs which produce the cabbage worm. The cabbage louse was unusually plentiful last season, as was also the fly on turnip plants. These minute insects thrive in wet weather, as they are killed by the dust which fills the air whenever the soil is dry.—American Cultivator.

Horticultural Notes.

The stake method of training grape vines has but one advantage over any other. We can plow and cultivate both ways and keep the ground clean with less hoeing. It is, however, not as good as a trellis, neither is it as convenient for tying and distributing.

The announcement has been made that the Massachusetts Horticultural society will spend $3,800 during 1891 in prizes for flowers and plants.

James J. H. Gregory says that for the onion maggot he has found hens and chickens a possible remedy. He claims that a hen and brood of chickens will take care of from an acre to an acre and a half.

In naming a list of desirable plants for the florist, Mr. J. W. Manning calls attention to Trillium grandiflorum as one of the best of early flowers of the easiest growth, and adapted to a great variety of soils. Its handsome white lilylike flowers are greatly admired.

Red cedar, according to many authorities, is not adapted for hedge purposes.

The following blackcap raspberries are worthy of trial in a small way: The Progress or Pioneer, said to be earlier than the Doolittle, while it fruits more abundantly; the Older, said to be of large size, jet black and very hardy—it ripens after the earliest kinds; the Lovett, notable for size, quality, firmness, earliness and hardiness.

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DESCRIPTION OF A FEW OF THE PATTERNS in addition to the designing set. These patterns are all perfect and each one complete in itself. Splasher design, 8x22 inches, 50c. Splash! Splash! Owl, with Umbrella, 6x9, for tidy. Handsome Outline Design for tidy, 5x7. Star and Anchor, for sailor blouse. Lawn Tennis Racket. COMPLETE SET OF CAPITAL LETTERS. Alphabet of Small Letters, to go with the above. 1 set Large Numbers; 1 set Small ditto. Beautiful Tinsel Design, 6 in. wide, for Lambrequins, etc. Narrow Braiding Pattern, 1 1-2 in., with corner turned. Several Flannel Skirt Patterns, wide and narrow. Good Night and Morning, for pillow shams. Stars, Crescents, Disks, etc., of different sizes, for tinsel or art thread, etc. Tea Pot, Creamer, Sugar Bowl, and Cup and Saucer, for tray cloths, etc. Large Spray of Roses and Buds, 6x12, for end of table scarf or any other purpose. Large bunch of Daisies, to match Roses in size. Beautiful spray of Poppies, 5x9. Spray of Lilies to match. Sickel and Spray of Wheat. Several Running Vines. Small designs for Crazy Patchwork, etc. Birds, Figures, Fruit, Pinks, Buttercups, Chicken, etc., etc. Large bunch of Pond Lilies. Sprays of Fuchsias, Primroses, Roses, Ox-Eye Daisies, Barberries, Clover, Grasses, Golden Rod, Sumac, etc., etc.

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ORCHARD AND GARDEN.

TOPICS OF INTEREST TO FRUIT GROWERS AND GARDENERS.

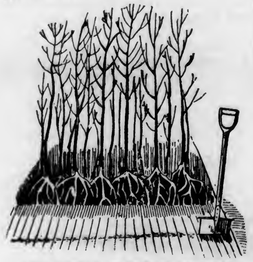
How to "Heel In" Trees Received from a Nursery When It Is Not Convenient to Plant Them Out at Once—Do Not Use Straw, Salt Hay or Leaves for Covering.

In every nurseryman's catalogue occurs the following advice, "On the arrival of trees from the nursery 'heel in' when it is not convenient to immediately set them out." This is very well for experienced men, but amateurs do not all know how to heel in trees.

SIDE VIEW OF HEELED IN TREES.

To assist this class of would-be horticulturists J. T. Lovett, of Little Silver, N. J., gives in his "Guide to Horticulture" for 1891 an illustrated description of the operation, which we herewith reproduce:

Select a suitable spot, where soil is not too wet, but rather dry and mellow, open a wide, deep trench, and lay in the roots carefully, inclining the trees to the north at an angle of about 45 degs. With the soil from the next trench carefully cover them well, filling in all interstices among the roots and covering up so that the trees stand in the trenches much deeper than formerly in the nursery row. In the next trench made proceed to lay in another row of trees as before and so on. It is important to place them in the trench deeper than they stood before, because in many cases the soil is apt to be washed away, and special care should be used that the roots are well spread out and soil worked thoroughly down among them. In no case use straw, salt hay, leaves or anything of that sort for covering trees, as it only attracts mice and other vermin.



FRONT VIEW OF HEELED IN TREES.

In the first cut is shown a side view of a lot of trees heeled in. In the second cut is given the front view. In this connection it is well to remember that small trees, as a rule, will come into bearing sooner than the larger ones. The larger the tree the less fiber there will be from the roots. A tree that has plenty of fibrous roots will live and flourish, while one that lacks such feeders is liable to die.

WASHER! WRINGER! BENCH!

And a Year's Subscription to Farm and Vineyard,

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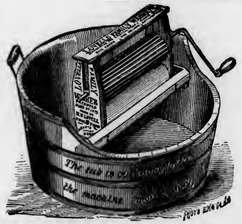


We will guarantee the "Lovell" Washer to do better work and do it easier and in less time than any other machine in the world. Warranted five years, and if it don't wash clothes clean, without rubbing, we will refund the money.

We have made special arrangements by which we can supply a limited number of these Washers for $2.00, including a year's subscription to Farm and Vineyard, or we will give the Washer free to anyone sending in a club of ten subscribers at our regular clubbing rates, 25 cents each, but we cannot pay freightage.

We will sell this Wringer for **$3.00**, *including a year's subscription to the Farm and Vineyard.*

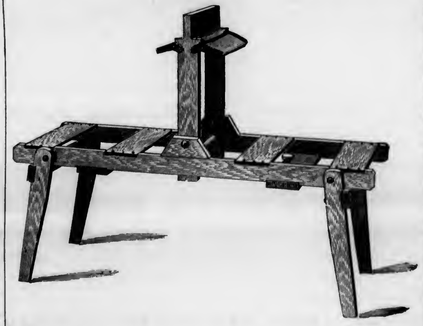
Celebrated Keystone Wringer, No. 10.

We desire to call your attention to this new Wringer. The frame is made of the best Hard Maple, and the Rolls are of solid White Rubber, fastened in the most secure manner to the shafts. The pressure is secured by the use of the Steel Spiral Spring, especial care being taken to procure the best Spring Steel for this purpose. The side pieces are bolted together in such a manner as to prevent the possibility of spreading or splitting.

The Clamps used in the "No. 6," are made entirely of Malleable Iron, and are of such form and construction as will secure the Wringer to the tub most effectually, and are attached in such a manner as to make them adjustable to any sized tub, round or square.

The essential features of this Wringer are strength, durability and easy working. It has been subjected to the most severe tests, and is found to possess the great merit of being a "dry Wringer," and remarkably easy to operate. We do not hesitate to recommend it as a machine that will give entire satisfaction.

FOLDING DOUBLE WASH BENCH.



The engraving represents the most complete artices of the kind ever offered to the public. Made of all hard wood, nicely finished. The upright piece is so constructed that any kind of a Wringer can be fastened to it. By pressing lightly on a button with the left hand the standards bearing the Wringer may be easily let down with the right to a level with the top of the bench. The legs may then be folded under, thus forming a snug and compact package, occupying but little space when not in use, and being in the most desirable shape for transportation. It is provided with a double water-board, so that the Wringer may be used from either side. This is an article that fills a long-felt want and will be greatly appreciated by all housekeepers. The price is but a small item when the real convenience of such an article taken into consideration. Why continue to use a rickety chair or clumsy box, when this substantial and convenient bench is at your command for a mere nominal price. Here your Wringer is always out of the way and just where you want to use it, Every woman knows that nothing injures her tub so much as the straining of the Wringer attached to it. One of these Benches will last twenty years. Don't you think you would save its cost a good many times over in that time? Our agents will find it a most desirable article to handle in connection with the Washers and Wringers.

We offer this Bench for 8 Subscribers to Farm and Vineyard at our regular clubbing rates 25 cents each; or will sell for $1.50, including a year's subscription to this paper; or will sell the Washer, Wringer and Bench, and the Farm and Vineyard a year for $5.00.

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LIVE STOCK TOPICS.

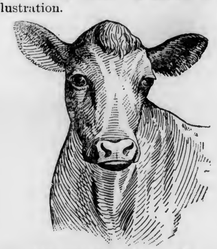
THE PRODUCTION OF A BREED OF HORNLESS CATTLE.

How a New Race of Polled Cattle Is Being Built Up on a Connecticut Farm. Picture of a New Canaan Polled Cow. Good Milkers and Gentle.

Hoyt Brothers, of New Canaan, Conn., are gradually breeding a race of hornless cattle. One of these cows, shown in the picture, has as pretty a "bang" as a fashionable girl. The Rural New Yorker gives a highly interesting account of their model farm, which furnishes convincing evidence that agriculture in New England can still be made to pay where the farmer mixes brains with his toil.

How the New Canaan breed of polled cattle was built up, The Rural New Yorker relates as follows:

The Hoyts have never been able to see any use for horns on dairy cows. Some years ago they began to collect a polled herd. Here and there, scattered about the country, they found "muley" cows—no one knows how they came to be without horns. A fire destroyed all their cattle, and they then began again the slow task of hunting for "muleys." One of the best cows dropped a polled bull calf, and with him at the head of the herd it was soon easy to produce polled calves. The present bull looks like an Ayrshire with a dash of Jersey blood. Many of the cows plainly show the Jersey characteristics, while the Ayrshire color largely predominates. They are as gentle as sheep. They are above the average as milkers, and the milk is of excellent quality. A typical picture of the head and shoulders of one of this "new breed" is shown in the illustration.



NEW CANAAN POLLED COW.

With the home bred stock it is next to impossible to obtain a horned calf. Horned cows are sometimes bought, but they are dishorned as soon as possible. At least 75 per cent. of the calves from these dishorned cows and the polled bull are polled. The cattle are fastened in the Parson's stanchion, and the polled heads are secure there. Horns are not necessary to hold an animal's head in the stanchion! The oxen used on the place are Devons, with fine large horns, but Mr. Hoyt proposes to try polled oxen, too. The bull is worked in a tread power. The cattle are well fed and cared for. Two large silos are filled every year.

A good deal of the ensilage corn is grown close by the barn, on ground where nursery stock is "heeled in" until May. Dry stalks from which ear corn is husked are run through the cutter and fed dry or with the silage. But little hay is fed, the stalks and silage affording "roughage" enough. It pays better to sell timothy hay and buy stalks and grain. In former years many tons of roots were grown, but the silo has made the root crop a "back number." Clover was tried in the silo one year, but did not prove wholly satisfactory. It turned out strong smelling stuff, unpleasant to handle. The corn is ground, "cob and all," and large quantities of bran, oats, cotton seed meal, middlings, etc., are bought and fed. The grain is fed dry or scattered on the ensilage, which is given three times a day.

The cows are turned out to water every day. The water is brought to the barns by means of a hydraulic ram, which has been in use since 1856. Suitable pipes carry it all over the buildings and into convenient tanks, about which the polled cows cluster like sheep. Surplus milk is sold to the local creamery. The manure is hauled or wheeled out into the barnyard, where it lies until wanted for the crops. Mr. Hoyt is convinced that it will pay him to build a roof over this yard to protect the cows and the manure from the rain. He also wants some more economical way of getting the manure out of the stable than wheeling it out. The barns and sheds are built close together, and steps are saved whenever it is possible to save them.

Beautiful Percheron.

Our illustration shows one of the most stylish Percheron stallions ever brought to this country. He is at present owned in Wisconsin. This is one of the horses Rosa Bonheur loved to paint, and when this particular animal was brought away from France she made a trip to see him and bid him farewell. She thought it was a pity that so beautiful a horse should leave France. However, France's loss is America's gain, and America is the future horse breeding ground of the world. The stallion in the picture is especially noted for his grace and spirited action. He weighs 1,900 pounds.

PERCHERON STALLION.

This fine horse is a noted prize winner. He is very active, clean limbed and sure footed. He shows even in the black and white of plain newspaper illustration the beautiful mottled gray color so characteristic of the Percheron, the tintings of which Rosa Bonheur brings out so marvelously in her horse paintings. While these Percheron horses are as docile as they are beautiful, they have a will of their own. Not long since a French steamer bringing a splendid Percheron stallion to the United States was delayed half a day by the pranks of the animal before he could be induced to board the ship. He was perfectly good natured about it, playful, indeed, but when it came to walking the plank and boarding that ship he simply would not do it. It was necessary to be careful not to frighten or injure him, hence the task was rendered all the more difficult. At length it was necessary to rig a contrivance, which brought him up the ship's side by main force.

Don't let your cows drink soap suds and kitchen slops. It is nasty, and cows have died from drinking such messes.

Among the newer squashes the Sibley and the white chestnut are reported by E. S. Goff, of the Western New York Horticultural society, as valuable additions to the old list, and the former likely to prove a formidable rival to the Hubbard.

Seeds! Seeds! Seeds!

So many of our subscribers have requested us to offer **Vegetable and Flower Seeds as Premiums** with the paper, that we have decided to make the following very liberal offer. We will send any of the following collections by mail, postpaid, and a year's subscription to the paper for 50 cents, or we will send either collection, postage paid, to any person getting up a club of 5 subscribers at 25 cents each.

Collection No. 1.

15 Packets Choice Flower Seeds, as follows: 1 packet each Choice Mixed Asters, Balsam, Balloon Vine, Calendula (Prince of Orange) Candy Tuft, Summer Chrysanthemum, Clarkea, Convolvulas or Morning Glory, (mixed colors), Nigella, (love in a mist), Marigold, (choice mixed), Mignonette, Climbing Nastartium, Sweet Pea, Striped Petunia, and Finest Mixed Pansies.

Collection No. 2.

Contains 12 Packets Choicest Flower Seeds, as follows: 1 packet each Choice Mixed Asters, Balsam or Lady Slipper, Cypress Vine, Choice German Pansies, Mammoth Verbena, Mignonette, Phlox, Drummondi, Finest Bedding Petunia, Double Zinnia, Double Portulaca, Moon Flower, and Finest Cockscomb.

Collection No. 3.

Contains 8 Packets Vegetable and 8 Packets Flower Seeds. 1 packet each Early Beet, Early Summer Cabbage, Early Spine Cucumber, Lettuce, French Breakfast Radish, Vegetable Oyster, Spinach and Dwarf Champion Tomato.

FLOWER SEED.—Choice Mixed Aster, Candy Tuft, Mignonette, Sweet Pea, Pansy, Striped Petuna, Mammoth Verbena, and Double Zinnia.

Collection No. 4.

Contains 14 Packets Choice Vegetable Seed.—1 packet each Early Beet, Cabbage, Intermediate Carrot, Golden Heart Celery, Premium Cabbage, Lettuce, Long Green Cucumber, French Breakfast Radish, Early Hackensack Mush Melon, Hollow Crown Parsnip, Dwarf Champion Tomato, Vegetable Oyster, Spinach, White Globe Turnip, and Golden Bush Squash.

Collection No. 5.

Contains 12 Packets Choice Vegetable Seed.—1 packet each Blood Beet, Marblehead Mammoth Cabbage, Half Long Carrot, White Plume Celery, Improved White Spine Cucumber, Egg Plant, Boston Market Lettuce, Surprise Melon, Yellow Danvers Onion, Large Bell Pepper, Scarlet Olive Shaped Radish, and Cardinal Tomato.

Collection No. 6.

Contains 12 Packets Vegetable Seed.—1 packet each Black Wax and Golden Wax Beans, 1 packet each Early and Late Beet, 1 packet each Early Jersey Wakefield, and large late Flat Dutch Cabbage, 2 packets Carrots, 1 early and 1 late, 1 packet each Yellow Danvers and Silver Skin Onions, 1 packet Summer Squash, and 1 packet Early Tomato.

When ordering collection, order by number.

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On the first day of May we shall place on the market Professor CHARLES F. ESCHER'S NEW BOOK, entitled

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being a compilation of vocal and instrumental music, adapted to piano or organ. The work will contain the best and most popular selections of the renowned authors of this and foreign countries. **32 full-page lithograph portraits of famous vocalists, instrumentalists and composers.** Nearly 450 pages. **Size 10 x 12 inches.** Durably bound in cloth, stamped with appropriate design. This work is especially intended for musicians who desire **a variety of choice pieces.** Contains plenty for the beginner, and a good supply for the inexperienced. **Over 1000 advance orders already received. AGENTS WANTED in every town to to begin May first.** We guarantee satisfaction, and refer you to Dun's or Bradstreet's agencies for our responsibility. **Goods on 30 days' credit.** For special terms, etc., address

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LOW COST POULTRY HOUSES.

Single and Double Poultry Houses That Are Both Good and Cheap.

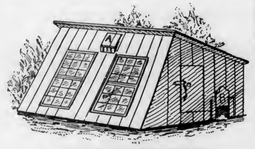
It is not possible to present a design that will be acceptable to all, but here are two plans for poultry houses, each of

A CHEAP POULTRY HOUSE.

which has several recommendations. These designs were specially drawn for The Farm and Fireside.

Fig. 1 shows a house in which the roof and sides are combined. It may be 16 feet square, 9 feet at the peak, with a board at the bottom 1 foot high, or it may be of any size desired. The cost for material is about $15, the floor being of earth. It is not so convenient for one entering it as is the house shown at Fig. 2, but this house gives more room on the ground, at less cost. Windows should be at both ends, and the roosts may be short, so as not to interfere with ingress and egress of the attendant.

Fig. 1 shows a double house. This house is 10 by 16 feet, divided into two apartments, each 8 by 10 feet, and will cost about $15. Each apartment will accommodate about ten or twelve fowls, and one ventilator (A) will answer for both. There are two entrances to and from the interior, one at each end (B), and a wire or lath partition, with a door



A DOUBLE POULTRY HOUSE.

in the partition, separates the two flocks. This house, like the other, gives plenty of room on the ground, and is more convenient in some respects, but both are good and cheap.

Top Dressing Grass Lands.

A trial was made of spreading nanure upon the ground late in the fall, also of leaving it in small heaps on the land in the fall and spreading it early in the spring. A third trial was made of hauling the manure and spreading the last of April just before the grass started. The manure was spread as evenly as possible and bush harrowed. The best result was from the land on which the manure was spread the last of April. The poorest result was from the manure left in heaps over winter and spread in the spring.

Not realizing satisfactory returns from either of these experiments, a portion of my land was planted two years to fodder corn. The spring following the same quantity of manure as used in top dressing was spread and plowed under and the land laid down to grass. With the grass seed was sown a sufficient quantity of oats to smother the weeds the first season. The result was that the crop of oats and grass the first year was of more value than the best crop of grass realized from top dressing. It continued to be of much better quality and quantity in the four succeeding years.

Another experiment for producing grass was made upon land broken up in August. The manure was spread upon the sod, thoroughly harrowed under and the land laid down to grass. The result of this experiment was fully as satisfactory in quantity and quality of grass as from the land planted two years to fodder corn and then laid down to grass. These experiments, which have been conducted through a series of ten years, lead to the conclusion that there is much loss in the fertilizing properties of manure applied to the surface of the earth. —American Cultivator.

Oxford Mutton.

At the meeting of Ohio breeders a paper was read ably advocating the Oxford breed of sheep. In the discussion following it this statement was made: "Oxfords will clip about three pounds more wool here than in England. They have been bred for the purpose of supplying very fat mutton for the miner and workingman of England, and the aim of their improver has been realized. They will eat the coarsest, roughest food and produce a quality of mutton that the workingman can afford to consume. The wool on the Oxford is of its own kind. It would not be good wool for the Shropshire or for the Southdown. And so far as mutton is concerned the Southdown is the best of all breeds, and Southdown mutton cannot be had outside of that breed. Many Shropshire men are trying to get near the Southdown type, and the nearer they approach it the better sheep they have."

Points of Interest.

For the winter live stock market Chicago receives a weekly average of 250,000 hogs, 50,000 sheep and 60,000 cattle.

At the Nebraska state poultry show the principal breeds entered for premiums were White Plymouth Rocks, Silver Spangled Hamburgs, Light Brahmas and Leghorns. Bronze turkeys were in favor. There were a few entries of games, bantams and Partridge Cochins.

Remember the ideal winter food, not only for dairy cows, but for all cattle, is that which approaches nearest to the green, juicy pasture of summer—in a word, ensilage. The time to learn how to build a silo and get "points" about its construction is now, before the spring work begins.

The trade in dressed beef is steadily gaining on the live cattle market. In 1890 2,223,593 animals were slaughtered in Chicago, an increase over 1889 of 460,661.

At the sale in New York of trotting stock from Senator Leland Stanford's Palo Alto farm, Almoner, a 3-year-old brown colt that had made his mile in 2:31¼ at 2 years old, brought $2,950.

A Colorado man has some bees that last summer produced from 100 to 175 pounds of honey to the colony. It was because he knew how to take care of his bees, and because they had plenty of the kind of food that suited them. The honey they made was very thick.

Don't let the bees out till the cold weather is over.

Half blood hogs for market and pure bred ones for breeding is a good rule.

Weeping Trees.

With a fine, well kept, velvety green lawn, tastefully planted with ornamental trees and shrubs, the grounds around a dwelling may be rendered very charming, but the effect may nevertheless be increased by a judicious selection of weeping trees. Of these some of the most beautiful are the weeping ash, weeping beech, cut leaved weeping birch, Camperdown weeping elm, weeping sophora, white leaved weeping linden, weeping mountain ash, weeping poplar, American weeping willow and Kilmarnock weeping willow.

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IT contains **nothing that can injure the finest Fabric.** It brightens colors and bleaches whites.
IT washes flannels and blankets as no other soap in the world does—without shrinking—leaving them soft and white and like new.
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ONE **trial** will demonstrate its great merit. It will pay you to make that trial.
LIKE all **best things,** it is extensively imitated and counterfeited.
Beware of Imitations.
INSIST upon **Dobbins'** Electric. Don't take Magnetic, Electro-Magic, Philadelphia Electric, or any other fraud, simply because it is cheap. They will ruin clothes, and are dear at any price. Ask for
DOBBINS' ELECTRIC
and take no other. Nearly every grocer from Maine to Mexico keeps it in stock. If yours hasn't it, he will order from his nearest wholesale grocer.
READ carefully the inside wrapper around each bar, and be careful to **follow directions** on each outside wrapper. You **cannot afford** to wait longer before trying for yourself this old, reliable, and truly wonderful
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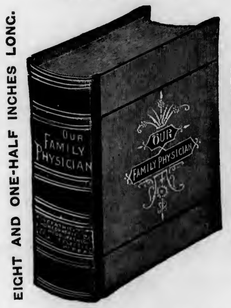

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SECOND. When a person is really attacked by a **dangerous disease,** it enables you to know the act, and in such cases its advice is: "Send for a competent physician at once." But in all ordinary cases, such as can be easily cured (and most of the ailments in a family are of this kind, if only you could recognize them) it gives full directions for treatment. The point is, that it teaches you to distinguish between a **dangerous** and a **trifling** disease, and tells you when it is necessary, and when not necessary, to call a physician.
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Besides this, there are three chapters in the work which are worthy of special mention, namely, those on "Diseases of Women," "Diseases of Infants" and "Care of the Sick."
The first of these is a model of its kind. It is chaste in language, contains no disgusting pictures for children to happen on and be over curious about, and taken altogether is the most practical, sensible and straight-forward treatise upon this delicate subject that has ever been printed.
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FARM AND GARDEN.

SUBJECTS SURE TO INTEREST AMERICAN AGRICULTURISTS.

The Knee Sprung Horse—Some of the Causes of This Disease, with Directions for Its Prevention and Cure—How an Affected Animal Stands.

The exact cause of this disease has never been clearly made out; it generally appears as if the ligaments and bandages of the knee had become strained and enlarged, in which also the front and back sinews may become involved by over exertion of those parts, when the bones of the knee joint being no longer properly retained in their places become bulged or sprung forward. Young horses subject to an excess of hard pulling before they are matured are liable to injure their knees in this manner and care should be taken not to overtask them under the age of seven years. Horses employed in constant "up hill" work or suffered to stand in stalls where the fall is considerable and the floor hard, exerting the muscles of the legs and keeping the ligaments in a tense state, would be exposed to a bowing out of the knees in consequence of the ligaments and tendons becoming weakened.

POSITION OF LEG WHEN KNEE SPRUNG.

When the proper angle of the foot is destroyed, as is usually done by improper shoeing, such as having high toes and low heels, or when sore heels cause a constant leaning forward on the knees to relieve the pressure, the evil of which we treat results. When the disease becomes chronic a radical cure may become impossible, but taken in time it can be cured.

A A, angle of foot, 45 degs.; B B, line to which foot should be cut.

Russell, the authority for the foregoing, in his work on scientific horseshoeing, advises, in dressing for this disease, to pare the foot level and lower it to its proper angle. The shoe should be narrow in the web and as light as can be safely worn, being also well concaved on the ground surface and adjusted as far back at the heel as the safety of the foot may seem to require. A style of the scoop toed shoe or the scoop toed rolling motion shoe should be used; though, if toe and heel calkins are necessary, use the four calkin shoe. Either of these patterns, by shortening the ground surface at the toe and strengthening the knee when the horse is moving forward, will relieve the strain and enable him the better to pass his feet over uneven ground surface, which is sometimes the cause of twisting and straining the already injured parts. Another means of furthering a cure is to feed the horse from the ground. This will have the effect of throwing the animal's weight more directly over his limbs, and thus assist nature, in a manner, to retrench the enlargement in the knee bandages.

Sowing Grass Seed in the Spring.

If spring seeding is to be done make the necessary arrangements in advance, so that the seeding can be done early. If grass and clover seed are to be grown together sow the grass seed a week or ten days before sowing the clover. Use plenty of seed, for one of the essential items in securing the most profitable crop with grass is to have a good, even stand, and to secure this it is necessary to use plenty of seed.

When sowing for meadow it is best to keep each variety of grass separate. With the exception of orchard grass and clover no two varieties of grass ripen at the same time, and if one is cut at the right stage the other will be a little too green or too ripe. Orchard grass and clover ripen together, and can be sown together to an advantage, the orchard grass helping in many cases to prevent the clover from lodging. Orchard grass, clover, timothy and redtop stand first as the principal grasses sown for hay, and they should be the foundation grasses for all meadows or grass fields.

One of the best times to sow grass or clover seed is when the soil is thawing and freezing alternately night and day. Timothy or redtop, and sometimes clover, is sown on winter wheat. Others prefer to sow oats and then sow clover, but the objection to this plan is that when the crop is harvested it leaves the grass plants exposed to the hot rays of the sun, and as it is often the case that there is more or less drought at this time, the plants are either seriously injured or entirely killed out.—American Cultivator.

Separators and the Honey Market.

The influence of separators on the honey market was a subject for consideration in a recent issue of The Beekeepers' Review.

J. A. Green, of Dayton, Ills., approved of separators, and uses these in the shipping cases as well as in the supers. He contended that with separators honey reaches the market in more attractive condition, is easier to handle and to sell than is that made without them. He prefers the tin separators.

Dr. C. C. Miller advised the use of separators wherever one wants their comb honey to be packed for shipment in some receptacle other than the one that was on the hive. He said, "If loose separators are to be used, give preference to wood; if fixed, tin."

R. L. Taylor, of Lapeer, Mich., said that separators do not lessen the yield of honey, but they are an expense from which there are no cash returns. He summed up the whole matter as follows: For profit alone use no separators; if straighter combs are desired use the T super with separators; if the eye and the taste are to be gratified at the expense of financial profit use single-wide frames with separators.

Why Poultry Runs Out.

American Cultivator says: First crosses with almost any standard breed of fowl are pretty sure to produce good results. The man who makes the cross knows the characteristics he wishes to breed to, and the cross generally secures them. But these grade fowls, though often valuable for egg producing, are not trustworthy for breeding. Their progeny are not grades but mongrels. Changing the males in a flock is often advised, but if the new stock are mongrels there will be little advantage from this. The flocks on farms all over the country are largely of this mongrel stock, and this is one reason why so many have poor success with poultry. Forty or fifty years ago the common dunghill fowl in this country, though originally intermixed, had been inbred long enough so that it had become almost an established breed. Few, if any, of these old fashioned fowls are now left anywhere. As a consequence the introduction of new blood in every flock not absolutely pure bred is a necessity every two or three years, and in every case males of pure blood, and so far as possible of the predominant strain of the flock, should be introduced for crossing.

QUEEN, DRONE AND WORKER BEES.

The Three Kinds to Be Found in Each Colony—All About the Mother Bee.

The queen is the mother bee, and the most important personage in the hive. The queen, as compared with other bees, is long lived. It is not unusual for her to do good work for from three to four years. All depends upon her excellence and vigor. Some queens cease to be useful at the end of one year, others at two and so on. When they no longer lay impregnated eggs—cease to be fertile—the workers rear a new queen and destroy the old one.

It is the queen's mission to keep the colony well populated—in a word, to lay eggs. A good queen lays from 2,000 to 3,000 eggs per diem, or nearly double her weight of eggs per day. Queens differ, however, in the matter of fecundity; the good ones keep the hives populous with active, profitable bees, while inferior ones, although they may lay eggs for a time, are never profitable. Those imperfectly developed bees are, according to Root, the result of trying to raise a queen when there are too few bees, or when the larvæ with which they are obliged to rear a queen are too old—that is, too nearly ready to seal up. Professor Cook says that this lack of fecundity may be due to disease, improper development or to special race or strain. The activity of the queen is governed largely by the activity of the workers. According to Professor Cook, as the worker bees feed the laying queen, it is more than probable that with no nectar to gather the food is withheld, and so the queen is unable to produce the eggs, which demand a great amount of nutritious food all ready to be absorbed.

Queens begin to lay when about eight to ten days old, as a rule. If a queen is not fertilized in, say, a fortnight from the time she is hatched she will frequently begin laying without being fertilized

QUEEN—DRONE—WORKER.

at all, and is commonly known as a drone laying queen. The queen is an important individual of a hive only so long as she is useful. When her usefulness ceases she is destroyed with as little consideration as are the drones.

The drones are the male bees, and are generally found in the hive only from May to November, though they may remain all winter. There are in nature several hundred and often thousands in each colony. The number may be and is often reduced by the apiarist. The worker or neuter bees are the undeveloped females—the bees that do the work except that of laying eggs. There are from 15,000 to 40,000 workers in every good colony.

Pasturing Orchards.

"Ought apple orchards to be pastured?" was a question asked at a New York farmers' institute.

Mr. Van Alstyne answered: "I pastured an orchard of eight acres with sheep two years, and the fruit was improved. Sheep droppings are very valuable for the trees. I shall continue to keep sheep in my orchards."

Col. Curtis said: "The advantages of swine are that they do all that the sheep do in enriching the land, and they root up the larvæ of the codling moth which have escaped from the apples and are hidden just under the ground. The pigs will destroy all of these, which the sheep will not. All other larvæ will be in similar danger.

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ORCHARD AND GARDEN.

GARDENING AND FRUIT GROWING FOR AMATEURS AND PROFESSIONALS.

How Evergreens Are Pruned on the Grounds of Mr. Charles A. Dana's Country Home—Two Things That Exert a Good Influence on All Trees.

Evergreens are a favorite class of tree on the grounds of Mr. Charles A. Dana's home at Glen Cove, N. Y. Here one sees a large assortment, including the Abies veitchii, Abies cephalonica, Abies alata, etc. The Japanese hemlock is an attractive tree, and, according to the gardener of these grounds, one of the best of evergreens. Pica alba varcærulea is a form of the white spruce which here is matchless for beauty, the form being conical, with the branches bending gracefully outward and downward, making it a veritable Fountain evergreen. A clump of Douglass junipers form a beautiful low mass on the lawn, and by their golden hue yield a beautiful contrast with other evergreens in the collection. Then there are Pica polica, the most rigid of all spruces; Colorado blue spruce, always charming; Douglass fir, one of the hardiest and best evergreens.

BALSAM FIR NEGLECTED.

BALSAM FIR PRUNED.

All evergreens here are pruned in some measure to keep them within bounds, and for preserving their beauty indefinitely. This pruning consists in the main of simply pinching back the ends of the leader and main shoots soon after the new growth starts in the spring. By this means is secured a tree densely furnished with branches and foliage to the ground, and not one of these wretched specimens denuded at the base. In the cut are shown a Balsam fir as grown when no attention is given to the pruning, and one pruned after the fashion that exists on Mr. Dana's grounds.

Two things which exert a strong influence not only on evergreens, but all other trees on the lawns at Glen Cove, are that these are never allowed to crowd one another, and summer mulching is freely employed. This mulching consists in neatly cutting out a circle of sward four or more feet across, the tree being at the center. About two inches of soil is then removed from within the circle, and a mulch of straw applied to a depth so that with settling the surface of the mulch will be about even with the surrounding lawn. Thus the mulch hardly shows at all, while in this liberal width the lawn mower needs never to approach close to the tree with the danger of barking it, a most important advantage.

POULTRY LORE.

Extract from the Report of the Ottawa (Canada) Experimental Station.

Two of the worst vices which fowls in confinement are given to are egg eating and feather pulling. The first is caused by being kept in too great numbers in limited quarters; a craving for animal food; the nests not being dark enough, and the eggs exposed to view in consequence; the male bird being among the layers, and breaking an egg; hens laying soft shelled eggs. The second vice is caused by the absence of blood food, such as meat, fowls being in too great numbers, and not kept busy enough. Both faults, once acquired, are very difficult to stop. Prevention in both cases is far better than any cure. The nests for the layers should be as retired as possible, and a little difficult to approach. Eggs should be gathered as soon as laid.

If the habit becomes general stop the hens from laying by ceasing the soft food and giving nothing but oats. If convenient, move the hens to a strange pen, and that will aid in stopping the egg production. If there is an incorrigible egg eater in the pen she should be killed, or she will teach every companion to be as vicious as herself. In feather pulling a "bit" is sold by dealers in poultry supplies to go into the mouth; another plan is to feed the pullers nothing but feathers, and separate them from one another. With care to have the layers kept in small numbers, with proper variety of diet, neither of these habits should be acquired.

A few points to remember are: Make nens lay when eggs are dearest; breed stock when eggs are cheap. Keep a non-sitting breed to lay when sitters are hatching, and pay expenses of latter. Breed as many chickens as possible and as early as possible. They all represent so much money. Keep all the pullets. They are worth $2 each as prospective early winter layers. Kill or otherwise dispose of all hens after three years of age. Breed the best flesh formers for market. Feed them up to as great weight as possible. Well fattened, well dressed poultry will bring the best price from the best customers. If not accustomed to poultry begin with a small number. Learn to make a success of the few, then go on with a larger number. Do not neglect the little essentials to success, such as lime, gravel, meat, plenty of clean water, green food, dust bath, etc., regularly supplied to layers.

Poultry, like all other animals, are subject to disease. But with a run, such as they would have on a farm, and proper care in the cold, wet weather of a certain portion of the fall, diseases should be rare. One disease common to poultry is roup in its different phases of cold, catarrh and throat affections. The first symptoms are running at the nostrils and sneezing. In its more virulent form it is attended with swollen head and closed eyes and a most offensive discharge. It is better on detecting a case to kill the bird at once and burn it. If neglected it will contaminate all the others in the pen by dipping its nostrils into the drinking water, and so disseminate the virus. It is very contagious. A simple cold neglected will develop into roup. Treatment for a cold is to inject with a syringe a small quantity of coal oil, and if handy a few drops (five or six) of carbolic acid added. Two or three injections ought to effect a cure. Isolate the fowl from the others. The most frequent causes of disease are keeping too many fowls together and filthy quarters.

It is a criminal offense to give a fraudulent pedigree to a Jersey cow, calf, bull or heifer in Ohio. How would it affect some of our first families if a law were passed making it a penitentiary offense to give a fraudulent human pedigree and adopt a fraudulent coat of arms?

Every cow ought to have at least a month's rest before calving. Old cows are apt to tend toward perpetual milking. In this case dry them off. It can be done by leaving a portion of the milk in the cow's udder at each milking, in other words do not milk her clean. At the same time feed her mostly on dry food.

SEND 6c in stamps to OHIO POULTRY JOURNAL, Dayton, O., for sample copy. Mention FARM AND VINEYARD.

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Whoever has made himself acquainted with what may be learned from this book will admit that from its pages one may gather pretty much all the information that is needed to perfect an intelligent plan of advertising. It is not a complete newspaper directory. It is much better; for although it names barely one-third of the newspapers published, it does enumerate every one of the best and all that a general advertiser is likely to have occasion to use.

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Farm & Vineyard

And American Gardener's Assistant.

VOL. 5. NO. 3. ERIE, PA., JULY, 1891. FIFTY CENTS A YEAR.

Bagging Grapes.

A writer in *Popular Gardening* says it was only a few years ago when bagging grapes was a favorite subject of discussion at horticultural meetings and in the horticultural press. Much less is now being said about it, simply because spraying with the copper mixtures is proving a much simpler and cheaper way of preventing serious injury by grape diseases, and a much more effective one besides, and it protects the foliage as well as the fruit.

If it is true, as it now seems, that the Rose chafer can be disposed of by spraying with sludgite solution, or perhaps with the kerosene extract of pyrethrum, or even Paris green water if made as strong by the addition of lime (or the Bordeaux mixture) as safe to apply to the foliage without danger of injuring it, the grape grower who is up to the times, and uses these modern means of warfare—the sprayer and spraying liquids—diligently, will have little use for bagging hereafter.

Still the question of fighting the Rose chafer is yet in an experimental stage, and while we would not recommend bagging as protection from rot, we think that in many cases, especially where only a few vines are grown, it would be a reliable means of preventing injury by the Rose chafer. Another advantage of bagging may be found in the cleanliness and brightness of the clusters, which come out free from insects and filth. Mr. John Maytrott, of New Jersey, who informed us that he used 25,000 bags in one season recently, speaks in favor of cheap muslin or calico bags in place of the paper bags that were ordinarily used.

Mr. E. Williams found paper bags quite satisfactory. In regard to adjusting them he gave in *Garden and Forest* these directions: "The clusters are enclosed in paper bags, the mouth reaching over the cane, folded and secured with a pin. Some writers give instructions to gather the top of the bag around the stem of the cluster and pin it, but this is bad advice; first, because if it is done as early as is advisable to protect the fruit, the young clusters are too tender to withstand the strain of wind and water, and many of them break off before they acquire sufficient strength to withstand the pressure; and, secondly, many, I may say most varieties of grapes have such short stems that there is no room between the cluster and the cane to fasten the bag. The Brighton, Empire State, Noah and a few others are not subject to this difficulty, but for the first reason assigned the advice is dangerous.

A two-pound, plain manilla paper bag of fair quality, such as grocers use, is the size generally recommended, but I use the one and a half pound size in preference. This bag measures six and three-eighths by nine and a half inches. The two-pound bag is of the same length, but a little wider, which is of no advantage and costs more. An inch or two added to the length would be desirable for many varieties. The patent, square-bottomed bag possesses no advantages over those of the old pattern, and in fact I should prefer the latter at the same cost. The corners of the bags are cut off—at the bottom to let out any water that may enter, and the tops to facilitate its reaching around the cane. In fact, if the bags were open at the bottom they would probably be quite as efficient. The tighter and more perfect the roof or top of the bag to exclude the entrance of the fungus and water from above, the better. I sometimes use three-pound bags enclosing two clusters in each, which answers very well where the clusters are close and compact, but with looser clusters they are apt to grow into each other."

To sum up, we think that for a while yet, and under *some* circumstances, it may be wise to bag grapes, although the fact that the clusters were enclosed in two bags would not render the necessity of spraying grape diseases much less urgent. On the other hand, we are quite certain that it is only a question of time when we will have no more use for bagging, since means have been or will be found to give us full protection against all the enemies of the grape crop without the bags.

Corn is one of the best crops that can be grown as a forage crop. If grown rapidly it yields largely, can be cut and fed green, or cut and cured to make an excellent feed during the winter months.

The farmer who thinks and reasons, who notes the effects of different methods, and tries to find out the reason for each effect, is the one who is likely to make farming profitable, and it sure to find it interesting; while the one who blunders along in the old ruts from year to year generally thinks himself condemned to follow one of the most unprofitable and disagreeable of all callings.

Subscribe for THE FARM AND VINEYARD.

INV. '60

The Japan Golden Russet Pear.

Mr. Wm. Parry, to whom we are indebted for the illustratfon on our front page, says: The Japan Golden Russet Pear was found accidentally in an importation of Japan Persimmon Trees. Its rampant growth with dark, greenish brown glossy wood and large, luxuriant foliage was so distinct from anything with which we were familiar, that we were at once impressed with its wonderful vigor and beauty, and anxiously awaited its fruiting, feeling assured that if such a healthy growing tree should produce a desirable fruit it would be gladly received by all fruit and fruit tree growers, as well as for ornamental purposes. Nor did we have long to wait, for remarkable as it appeared in vigor and beauty, it was none the less remarkable in fruiting, and at two years of age was heavily laden with the beantiful Golden Russet Pears which were found to be crisp, juicy, sweet, pleasant and unsurpassed for canning or preserving. It is also said to make a remarkably handsome lawn tree. The fruit is flat or apple shape, ripening in September.

You will do yourself and us a great favor, my friends, if, when writing to advertisers, you say you saw their advertisement in FARM AND VINEYARD. They always use FARM AND VINEYARD customers well.

Thinning Fruit.

A writer in *Field and Farm* says:

"There is no work in the orchard or vineyard that will repay the fruit grower as well as judicious thinning of the fruit from the trees or vines which would otherwise be over-burdened. Especially is this true of apples, pears, peaches, and the heavy producing varieties of grapes.

It is evident that in developing the seed of any class of fruit or vegetable that the vitality of the tree and vine, is taxed to its utmost, while the elements of the soil are heavily drawn upon to supply the potashes and other salts appropriated by the pit or seed. It takes a greater amount of nutrition to develop the seed than it does the pulp. The seed is nourished at the expense of all other portions of the tree. No matter how poor the soil, how slight the moisture or how much pulp is produced the tree or vine will mature perfect seeds in every fruit that sets, to the starvation of every other part of the tree. Many a tree gives up its life to the maturing of seed. If more fruit sets on a tree than it can healthfully nourish, the fruit will be small, stunted, and in proportion as they are densely thick will the size diminish.

It is patent, therefore, if we take one hundred of the young fruit from each tree bearing two hundred before the fruit has made much growth, the remaining one hundred will be worth more than double the amount the whole number of imperfectly formed fruit would have brought in any market. Fully one-half the fruit formed on the average tree should be removed, and an equal number of bunches should be taken from the grape vines, if the best results are desired. The time lost in thinning is more than compensated for in the superior class of fruit obtained by the operation. Then, too, in thinning the fruit on the vine or tree the diseased or insect-blighted fruit can be removed and the remaining fruit be protected thereby, so that instead of getting wormy, scabby fruit at the harvest there will be a well formed and unblemished crop. The mistake made in allowing a tree or vine to overbear is the principal cause of disease, and the reason why the orchard or vineyard is prone to bear only every other year to its full capacity. By properly thinning the fruit annually, a handsome crop will be produced each year and the trees will be vigorous, thrifty and well prepared to resist diseases which attack the weakly orchard or vineyard. Thin your fruit now. Don't delay.

The Cosmopolitan is published at $2.40 a year, and is considered cheap at that; but look here, $2.00 gets the *Cosmopolitan* and FARM & VIVEYARD, both for one whole year if you send your order to FARM & VINEYARD, Erie, Pa.

Notes from Westfield, N. Y.

BY G. BARBER.

For the FARM AND VINEYARD.

Excepting dry weather, we are seemingly all right yet on grape account. Thorough and continued cultivation seem to be required now, and should the drouth continue, as it may continue, cultivation is what will best pay the grower of *choice* grapes.

Land is changing hands here to quite a large extent at advanced figures for grape purposes.

While grapes are the fruit to-day for this region, yet we have promise of a fair crop of small fruit. Peaches are nearly or quite a full crop. Apples not over one-quarter to one-half a full crop. Most kinds are represented except the Baldwin. Very few trees will bear Baldwin apples this year here, hence thousands of nice trees are without fruit. Last year the scab was very severe on most apple trees here. This year they seem to be healthy and making very fine growth. Probably this is one reason of the failure this year to produce the annual crop of Baldwin apples.

I notice that almost no attention is being paid to pruning orchards, and think a mistake is being made. On orchards old enough to bear fruit, June and July are two of the best months in the year to prune apple trees (if properly done) and future crops will be much affected by the present neglect of this important matter. Prune with a *sharp saw and cut close*, leaving *no* stub projecting from the limb on the tree. Avoid bruising any part of the tree and leave the wounds you make *close* and *smooth*. Should it be necessary to remove large limbs protect stump with paint or wax to preserve from action of the weather. In case *long* stubs are left on the trees they will *not* heal over, and decay will follow *down* the tree, injuring it beyond recovery.

FARM AND VINEYARD is one of the periodicals mentioned in Geo. P. Rowell & Co.'s Book for Advertisers.

Forthcoming Agricultural and Horticultural Exhibitions.

Erie Chrysanthemum Club's annual show Nov. 5, 6 and 7. Besides prizes for chrysanthemums, greenhouse plants, etc., a special premium is offered by the editor of FARM AND VINEYARD for the best collection of fruits. Premiums will also be offered for the best collection of grapes and for the best collection of vegetables.

Inter-state fair, Elmira, Sept. 1 to 9. Geo. M. Robinson, secretary and general manager.

Hornellsville Farmers' Club fair, August 24 to 28, inclusive. C. K. Mason, secretary.

Cowanesque Valley fair, Westfield, Pa. Frank Stearns, secretary.

Show this paper to your neighbor and tell him it costs 25 cents a year. If he don't want to subscribe for a whole year he can have it on trial at the following rates: three months, 10 cents; or, six months, 15 cents. Subscribe now, while the offer is open.

Useful Hints.

Agriculture is an industry which has but little more than passed the stage of infancy.

Beware of the "gentle" Jersey bull. The cows are indeed gentle, but the bulls are vicious and should never be trusted for an instant.

It is estimated that at two cents a pound an acre of grapes is more profitable than wheat at a dollar a bushel.

Linseed, gluten and cottonseed meal are good to put with corn meal to balance the ration.

It is one thing to grow fruit, another to pack it in presentable shape for market, and another to find a profitable market when it is ready to be shipped. The market should be found before the fruit is ripe. All fruit should be contracted before it is ready for picking.

Ever purchaser of our Paint Book gets a year's subscription to FARM AND VINEYARD.

In Australia the rabbit has cost that country more than all other animals put together, countless millions of them swarming the whole country, making it literally alive with them. They sweep every green thing from the face of the earth, destroying thousands upon thousands of acres of grain, as well as vineyards and orchards; in fact, taking such absolute possession of the country as to enlist the most serious efforts of the government in searching for some means by which to rid themselves of this rapidly multiplying curse. Up to the present time, however, no effective means have been discovered, and they have decided that their only hope is in importing and breeding predatory animals. With this end in view they have carefully studied the habits of the coyote and decided that it is the means by which the rabbit can be exterminated. They immediately set about securing a few for experiment, and the result of their efforts was the shipment of a number of coyotes recently for Sidney, N. S. W.—*Field and Farm.*

ORCHARD AND GARDEN.

THE IMPROVEMENT OF SUBURBAN AND COUNTRY HOMES.

The Popularity and Usefulness of the Clematis—How to Obtain Strikingly Decorative Effects with This Favorite Climber.

The clematis makes a quick growth and produces its flowers in profusion, a sufficient reason for its popularity. The uses to which clematises may be applied are exceedingly various. They may be employed for training over arches, as in the illustration; for hiding an unsightly bank or slope, and for draping an old ruin. They will grow in almost any situation if the soil is not absolutely deficient of food, or if the roots of other plants do not rob them of a fair supply of nutriment; and in such positions nothing would be required but to throw down a few tree roots or rough branches for them to scramble over.

A CLEMATIS COVERED ARCH.

Thus planted, a layer of manure worked in annually with the fork and a supply of water in very dry weather would secure a good result. Again, they rank among the ornaments for low walls, trellises, etc., to which they must necessarily in the first instance be nailed or tied; but once firmly fixed they should be allowed to fall down in rich, picturesque masses.

The Duchess of Edinburgh is counted as one of the best of the double white varieties and blooms freely. Imperatrice Eugene is a large white kind. The Henryi, a hardy, strong grower, produces creamy white flowers. Jackmanni is one of the strongest growers and best bloomers known, and bears flowers of an intense violet purple hue, distinctly veined. Jackmanni Alba is a seedling of C. Jackmanni, the most desirable of all the dark colored varieties, with which it is identical in every respect except color. Flower white, shaded lavender. The Fair Rosamond has bluish white flowers, with wine colored bar, and John Gould Veitch bears double flowers of lavender blue. These are a few of the many desirable varieties of clematis that are furnished by our leading seedmen.

Clothilde Soupert Rose.

This fine new polyantha rose has pleased well in the trial grounds of Popular Gardening. A distinguishing feature of the polyantha class is the branching clusters of bloom, and in this respect the present variety is no exception. It is true that in profuseness of bloom it falls somewhat behind others of its class, but this happens to be in its favor, inasmuch as the individual blossoms are possessed of size and dignity ahead of all others. While the rule with polyanthas is many but small flowers, in the Clothide Soupert we get very free bloom, with size and doubleness above the average. The color is pearly white, suffused with delicate rose toward the centre. The flowers may be characterized as exquisitely fragrant. The plant is of vigorous, healthy and roubust, although not rampant, habit of growth.

THE POULTRY YARD.

The proper way to feed corn to young chickens is to give it in a crushed or cracked condition. It may be fed to them dry or it may be scalded to advantage. It should always be given the fowls fresh, however, as, if mixed with water or any other liquid it quickly grows musty or sour, if not used.

Hard boiled eggs chopped fine and mixed with some other soft food is very good for young chicks, if not too much is fed.

In raising fowls for market two things are requisite: Liberal feeding and clean quarters; confinement does no injury, provided the yards are kept clean. The number of fowls that can be safely kept in one enclosure, depends upon the care given to cleanliness; if the floor is daily covered with dry earth, or coal ashes, and daily cleaned, and the runs spaded over about once a week, from 30 to 40 fowls can be kept in a house 10x15 feet, with a yard 20x40 feet, the former number of the large breeds and the latter number of the small breeds.

If you are setting many hens, it will pay you to test the eggs under each about five days after setting, and replace the sterile eggs with fertile ones from some other hen. Then give the hen you have robbed a new setting.

In feeding your old hens and the little chicks together have a place so constructed for the latter that the former can not get in; and your chicks will profit thereby.

The eggs that do not hatch after they are due twenty-four hours should be tested. This is done by taking a pailful of warm water and putting the egg in. If they wiggle and roll around there is a live chicken inside; all that are quiet either have dead chicks or are spoiled. If any kick they should be wiped dry and placed under the hen or in the incubator.

One of the greatest mistakes is in feeding the chicks too soon. They should not be fed until they are at least twenty-four hours old, and the first meal should be stale bread dipped in fresh milk

We are still offering the premiums previously offered. Don't you think you could get us a club if you tried.

Evaporating Fruit.

BY N. J. SHEPPARD, Miller Co., Mo.

For the FARM AND VINEYARD.

Whenever there is anything else like a full average crop of fruit there is always more or less that cannot be marketed to advantage and which, if not dried or evaporated, will to a considerable extent at least go to waste. Considering the quality of the product, the lessened risk of loss, the saving in labor at the prices which a good evaporator can be secured, the better plan is to arrange in good season for a good evaporator. It should be remembered that with a good evaporator nearly all kinds of small fruit as well as the greater part of the fruits as well as a number of vegetables can be evaporated to good advantage, and what is not needed for family use can be marketed to good avantage; so that if one is to be used it will be found a good plan to get early in the season so as to be able to get the full benefit.

Cherries and raspberries are among the very best fruits that are evaporated, and for this reason the evaporator should be secured early, and then a greater portion of the fruit that is not marketed can be evaporated.

No matter what the reason, there is always more or less risk in drying fruit in the sun, a sudden shower causing serious damage, while to this may be added the trouble of keeping clean. Then anyone that has tried it is well aware of the fact that with all classes of fruit, that which is evaporated is of a much better quality and will sell readily at a better price than if dried in the sun. A little experience will soon settle this fact to the satisfaction of anyone. In addition to this is the fact that with an evaporator the work of drying can go along irrespective of the weather, and this is quite an item—as fruit will ripen and go to waste irrespective of the weather, and with a good evaporator the loss can be made very small.

The size should be determined by the amount of fruit to handle. It is best to get one of a good size, as the cost of running is very little more, and on the majority of farms is a very small item. It is best to arrange a shelter under which it can be placed, as this will afford a better opportunity of using in bad weather. As with much other farm work, it is best to arrange in good season, in order to derive all of the benefit possible.

Our aim is to study the wants of our subscribers, and all our subscribers want seeds, bulbs and plants. You can have them mailed direct from the most reliable houses in this country. Purchasers of fifty cents' worth and upwards receive the FARM AND VINEYARD one year free.

At the Sixteenth Annual Meeting of the Association of American Nurserymen, President Emery in his opening address, said among other things:

"The near approach of the time set for opening the World's Fair compels attention to it. The fact is patent that California is determined by fair means or foul to control the horticultural department. The work of the classification committee, of which a member from California is chairman, is strangely ludicrous. The fact that four classes are assigned to horticulture and fourteen to viticulture shows the animus. A chief of the horticultural department, a Californian, has been appointed; his appointment has not been confirmed, the principal opposition coming, first, from his own state, and, and next from the horticulturists of the country at large. Under his management and dictation we can expect the wines, brandies and citrous fruits of California to head the procession, and her dried fruits and flavorless orchard products to occupy space that rightfully should belong to the class of fruits which are the bone and sinew, so to speak, of the business. A vigorous protest against such folly is in order, and failing to secure the recognition that our suggestions as nurserymen of the United States entitles us to, we ought to wash our hands of the entire matter, and respectfully decline to be used to bolster up the pomp and circumstances of bursted booms and departed glory."

We pay cash to agents who work for us, getting subscriptions to the FARM & VINEYARD.

New Vines for Vacant Spaces

Missing vines in the vineyard may be replaced by laying down a cane to fill the vacancy. Dig a trench a foot deep, lay the vine in it and bring it up with a short bend at the place where it is desired to have the new vine, and fill the trench with good, rich soil. Let only one cane grow and this may, in turn, be laid down in the same way if the other one did not reach the required spot. Three or four vacant spaces may be filled by this method. This will make an extra good vine because the cane is rooted the whole length of the trench and the vine can be brought into bearing much quicker than to set out a young one. Vineyards may be renewed in this way and in two years they will bear as well as a new lot of vines three or four years old. It might be a good plan to renew the vines every few years. Concords might need it every five or six years, but some other varieties not as often.

LOOK AT THIS! The FARM AND VINEYARD and the *Buffalo Express*, both a whole year for $1.00.

Don't allow heat galls to begin under collars. Prevention is easier than cure.

Subscribe for FARM AND VINEYARD

The beautiful pictures, Christ before Pilate and Christ on Calvary, are still offered. Either picture and a year's subscription to this paper, for only 50 cents.

Any lady who accepts our "premium" offer on page 4, and is not well satisfied with her bargain will have her money refunded on application.

We will send to any address in the United States the *New York Weekly World* and the FARM & VINEYARD, both one whole year for a dollar bill. Now is your time to subscribe.

To Make Timothy Grass Permanent.

American Cultivator has the following to say about timothy: Timothy is perennial in habit, and unless attacked by the white grub there is no reason except lack of fertility and moisture why it should not remain in good mowing and pasturing condition for years. But as timothy roots are mostly near the surface they soon exhaust it and the timothy disappears, to be succeeded by weeds of coarser grasses. Sowing either red clover or alsike with timothy is a good way to make timothy hold in the soil longer. These die out after the second year, especially the alsike, and their decaying roots furnish pabulum for the timothy for two or three years. If coarse grass succeeds the timothy the soil probably needs to be underdrained.

SOME EXPERIMENTS IN VARYING THE FOOD OF SWINE.

Corn Meal and Skim Milk and Barley and Skim Milk—Corn Is the Most Valuable as a Fattening Food, but Barley Builds Bone and Muscle—Variety.

Professor W. A. Henry, of the Wisconsin Experiment station, has been experimenting with barley as feed as compared with corn.

The purpose of this experiment was to determine the value of barley in comparison with corn for hog feeding. In the first trial ten hogs, fourteen months old, were divided into two lots of five each. To the first lot was fed barley meal, while the second received corn meal. The experiment continued eight weeks, during which time the first lot of hogs consumed 2,832 pounds of barley meal, and gained 601 pounds. In the same time the second lot of hogs consumed 3,100 pounds of corn meal, and gained 713 pounds. From this we find that: Lot 1 required 471 pounds of barley meal for 100 pounds gain. Lot 2 required 435 pounds of corn meal for 100 pounds gain.

This shows that it required 36 pounds, or 8 per cent. more barley meal than corn meal to produce 100 pounds of gain. In this experiment both feeds were soaked with water. It was found that it required about 3 pounds of water to properly soak a pound of barley meal, while a pound of corn meal required but 2 pounds of water. The hogs fed on barley meal consumed 30 pounds of water daily with the feed, while the hogs on corn meal consumed 22 pounds daily. Even with this large amount of water in the feed the barley hogs drank 2 pounds extra daily from a separate trough, while the corn meal hogs drank but three-fourths of a pound.

In the next experiment the pigs were about five months old at the beginning of the trial. There were six pigs in each lot. Lot 1 was fed barley meal and sweet skim milk; lot 2, corn meal and sweet skim milk. The experiment lasted nine weeks, during which time lot 1 consumed 1,993 pounds of barley meal, 2,404 pounds of sweet skim milk and gained 604 pounds. In the same time lot 2 consumed 1,807 pounds of corn meal, 2,192 pounds of sweet skim milk and gained 591 pounds. Lot 1 consumed 320 pounds of barley meal and 398 pounds of sweet skim milk for 100 pounds of gain. Lot 2 consumed 306 pounds of corn meal and 371 pounds of sweet skim milk for 100 pounds of gain.

Again, there is a difference of about 8 per cent. in favor of the corn. These experiments showed that when feeding barley care should be taken to prepare the food so as to render it palatble. Hogs will eat corn meal in almost any shape—dry, wet, and even sour; when fed barley meal their preference calls for considerable soaking in a comparatively large amount of water. Our results show that barley is not quite so valuable as corn, pound for pound, for laying on fat, but we must remember that corn has a very high feeding value in such cases as this. One prime use for barley is in giving the farmer an additional variety of feed.

As a rule we have too few kinds of feed upon our farms, and we rely too much on corn. In barley we have a feed capable of building up bone and muscle and serving a generally useful purpose on the farm. In California it is the almost universal horse feed, and no animals have more endurance than horses raised and fed on rolled barley. Barley is the common grain feed of England and north Europe. In the light of these facts, why should our farmers longer harbor any prejudice against it?

ITEMS OF INTEREST.

To Keep Down Choking Dust.—"Mother often tells Aunt Hetty," said a housekeeper miss the other day, "to dip the end of the broom in a pail of water in which she has poured a little ammonia—a teaspoonful to a gallon. The ammonia takes off the dust and refreshes the colors wonderfully. We couldn't keep house without it."

"A little coarse salt or some damp tea leaves strewed over a carpet before sweeping adds ease to the cleansing process," said Mrs. Downing, appearing on the scene and praising the girl for her thoroughness. "The reason is is that both the salt and the tea leaves, being moist, keep down the light, floating dust, which gives more trouble than the heavier. In sweeping take long light strokes, and do not use too heavy a broom."

But avoid the use of tea leaves on delicate colors, as they will surely stain light colors.—*New York Journal.*

To remove spots on velvet, the trimming must be unpicked on one side, and put over hot water to steam; then brush up the nap.

A husband may at times be silent and preoccupied, and yet it does not argue that he is indifferent to, or tired of his wife; he may be depressed, and yet not feel that marriage, for him, is a failure; he may be captious and fretful, yet feel no irritation against his wife.

Disease germs are said to be rapidly killed by sunlight, a few minutes sufficing for those fully exposed, and a few hours when in mass. Tubercle bacilli died in six to seven days in the light of a window in compact masses. There is a lesson in this.—*Penn.*

It doesn't look as if the war on cigarettes had accomplished much when it appears that a profit of 17 per cent. on $25,000,000 is annually made out of the business of manufacturing them.

"Talk about wives," said Farmer Hawbuck' "I've got one in a million. Why, she gets up in the mornin', milks seventeen cows, and gets breakfast for twenty hard-workin' men before six o'clock." "She must be a very robust woman," remarked one of his hearers. "On the contrary," put in the farmer, "she is pale and delikit-like. Jimminy! Ef that woman was strong I dunno what she couldn't do!"

Cucumbers for Pickles.

By T. D. B.

For the FARM AND VINEYARD.

The cucumber, though not as profitable as some other garden vegetables, is one of easy culture, not exacting as to soil and when kept free from its enemies I have found it a very profitable crop when grown for pickles.

The cucumber requires a great deal of moisture, therefore a naturally moist, yet not too heavy, loam is most preferable. Dry soil or dry weather, more especially the latter, not only decreases the crop but gives the fruit a bitter flavor.

In growing cucumbers it is of great importance to provide all the conditions favorable to a vigorous growth. The ground should be broken deep and well pulverized. It is hopeless to expect a profitable crop from ground that is not thoroughly plowed and mellowed. After the ground is leveled mark off the rows three and a half feet each way. Planted at the distance the vines cover the ground and the leaves shade it and keep it moist. At every crossing of the furrows a shovel of well-rotted manure, a compost of one-third stable manure and two-thirds woods mould, well rotted, is the best I have used. I usually put a handful of rotted ashes mixed well with the soil. Level the hills and slightly press them down. About a dozen of seeds are dropped on these hills, covered with an inch of soil and firmly press upon with the hoe or foot.

As soon as the plants are up cultivation should commence. The best way is to loosen the soil around the plant with the fingers. Keep the cultivator going once a week until the vines become too large. When the vines begin to fall, or before if there are too many plants in the hills thin out to two plants, leaving the most vigorous.

Some old gardeners claim that the vines must be topped to make them bear well; that none but male flowers grow on the main vine; that the side branches bear the female flowers, therefore the vine must be topped to make it throw out or increase the side vines for fruit. I always top the vines when about two feet long, but I am not fully satisfied that it makes the vine more productive more than to increase the number of vines. I have topped rows and left rows untopped and the untopped rows seemed to be as productive as those that were topped. Still, three or four or a dozen more fruits to the hill during the season would hardly be noticed, yet it make a considerable difference in an acre of cucumbers sold off by the thousand.

As soon as the fruit is the size desired, which is usually small, they should be picked. Cut them off with a half inch of stem to the cucumber. The patch should be gone over every morning. Handle carefully so as not to rub or bruise them. The best way to pickle for market is in brine. In putting up get two good barrels, cut out one head and as you put up one grade or size in one barrel and another size in the other. At each picking put in brine, which must be strong enough to float an egg, to cover the cucumbers. Add about a double handful of salt to the brine at each putting in of cucumbers. Keep weighted down with the head kept for this purpose. Keep in a cool place. Examine every few days for a while, if any soft ones take them out. This must be done for they will injure the others if this is not done.

ACTIVE AGENTS WANTED in every village and township. You can make money during the winter months. Address for particulars, FARM AND VINEYARD PUBLISHING CO., Erie, Pa.

Sympathy. Blossom the rejected (bitterly): "I wish I were a handsome fool." Carver. "Poor fellow, you're not very handsome, that's a fact."—Podunk Gazette.

Onions, Mildew and Maggot.

By S. D. MORROW.

For the FARM AND VINEYARD.

Mildew frequently proves most destructive to the onion crop, and it is frequently communicated from the autumn raised plants to the spring raised varieties. For this reason the two crops should be kept well apart if there is any sign of the disease in the former. It is then only in very cold or very moist summers that the spring raised crops are much diseased. A close watch should be kept for the first symptoms of mildew, and the affected leaves should be burned at once. A good deterrent effect is to loosen the surface of the ground occasionally with the hoe, and dust over the plants newly slaked lime and soot. This will also quicken the growth of the onions; but after all a great deal depends upon the weather, every farmer being more or less at the mercy of the elements.

The onion maggot will not trouble the plants much if the ground is strong and firm. When small onions suddenly become sickly and collapse in a few days this decay is usually the result of the workings of the maggots. Maggots are hatched from eggs that have been deposited on the leaves or stalks of the onions; but in about two weeks they shift their position from the plants to the ground, where they change to the pupa state, from which a fly eventually emerges. This fly deposits more eggs on the onions and the work is repeated. If the maggots are destroyed early in the year the chances of multiplying so rapidly will be lessened. Preventative measures can be taken, however, by using soot freely on the ground prior to sowing, and also in firming the soil. The seeds should not be sown too thickly, for the thinning out which is necessary later only loosens the soil without doing the other plants any good. The grubs can very easily get into the soil no matter how firm it may be, but the flies will find great difficulty in escaping if it is kept firm and compact. It is a good plan, if the maggots are very plentiful, to mould up the earth around the onion bulbs. Onions do better where the bulbs are exposed, but it is better to have bull-necked onions than to have none at all.

Any person who has no use for any of our premium offers, should write for our liberal cash commission to agents.

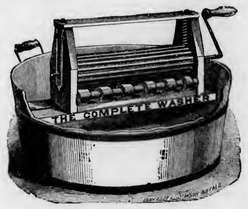
Buckwheat is a good crop to grow for green manuring. Its quick growth, in addition to the effect produced upon the soil, places it next to clover to plow under as a green fertilizer.

Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 50 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

Farm & Vineyard

Premium Offer Extraordinary For the Benefit of all the Wives and Daughters.

To any one who will send us *only three subscribers at fifty cents each,* we will send this



COMPLETE WASHER.

Price $5.00, or we will send the Washer for one subscription at 50 cents and 75 cents additional. There is not a woman who reads this paper, but can become the possessor of one of these valuable machines, by spending a few hours among her neighbors to secure the subscribers.

The paper alone is worth every cent we ask for it, but as an inducement, to all who read this, to become permanent subscribers, we make this liberal offer.

Show this copy of Farm & Vineyard to your friends, and if they can't pay you cash down for a year's subscription, you can well afford to wait on them for a few weeks for the sake of securing this valuable washer at so small a cost.

Send us the names now with the cash and we will commence mailing the paper and ship the washer at once by Express, with explicit directions how to use it.

We have *thoroughly tested* this machine and know it will give entire satisfaction, furthermore the manufacturers, (who are responsible) authorize us to warrant every machine for five years. It will fit any tub and will do all kinds of washing with a saving of more than half the time and labor over the old rubbing process.

Send in your Clubs and give us the name of your express office. The charges will not be excessive as the washer is light and must in all cases be paid by the receiver. Address,

FARM & VINEYARD PUB. CO., Erie, Pa.

The Gardener's Assistant.

Keep the grape vines in a healthy condition. Strong, vigorous vines never succumb to the rot so readily as those whose vitality is low.

Look out for red spiders on your window plants, it being so small and living mostly on the under side of the leaves, it is often an ususpected cause of much injury to window plants. Moisture is the best remedy: go over the leaves, especially the under side, with a soft sponge, using very weak soap suds. This will generally prove to be a successful mode of extirminating these pests.

If your window plants are attacked with either green or black fly, "aphis," wash them with tobacco water made in the following manner: Pour boiling water over tobacco stems and when cool dilute it to the color of strong tea. Sprinkle the plants with it; or, what is better, have the liquid in a pail or tub and dip the plants in it.

For table use there are probably no better varieties of currants than the old red and white Dutch. Fay's prolific is a very large and very handsome currant, but with us a very poor bearer.

Watch your crops as they ripen and harvest at the proper time.

Grapes, and small fruits generally, have a deided advantage over apples and large fruits, in the facility with which they may be laid down for winter protection.

Though science has not discovered all it would like to know about the potato fungus, it has made itself invaluable to the cultivator by what it has found out. To-day potato growing in the Old World has been rendered tolerably certain, when but a few years ago the terrible disease brought fears of its utter destruction.

You'll find in all the professions, in pulpit, in orchard and shop, as well as in strawberrry boxes—The best always get to the top.

The Prince of Wales devotes acres of his estate at Sandrigham to the cultivation of lilies of the valley.

Do not let any grass or weeds get a hold in the garden. Remember, the best time to kill weeds is before they come up. Scarify the surface as soon after a rain as possible. By no means allow any weed to go to seed in the garden.

The time you spend "fussing with flowers" may not return you as much cash as if expended on hens or onions, but the love of beauty, of color, of fragranée, inherent in every true woman will be gratified, and health comes with outdoor work.

The farmer who is to-day without a garden, a well stocked fruit and vegetable garden, is, indeed, behind the times, and lacking in appreciation of both his own and his family's best interests.

Early fruits command fancy prices but do not keep well. Attend to them promptly.

Successional Crops of Vegetables.

It is better for the ground and for the weeds to plant seeds of some useful vegetable after the early crops are removed. The flat turnips make a good second crop, which can be planted with success in August, or the first of September. They must grow quickly to be of any use, and if sown too early they become too large and coarse for table use. Those that are grown rapidly in the cool autumn weather make good eating. About the middle of August a crop of late peas can be sown, with a succession some ten days later. The chief trouble from such a crop will be mildew. If they escape this a reasonable crop of late peas may be expected. Some of the copper mixtures, now used successfully for fungus on grape vines, should be experimented with for preventing the mildew on peas. Parsnips and carrots of medium size should now be thinned to get good sized ones later in the season. Egg plants can be kept growing and bearing better by occasional applications of liquid manure.

During the wet warm weather tomato plants have been making extrordinary growth, while setting very little fruit. If a sharp spade is run down beside the plants to prune their roots a better formation of fruit will follow. The musk and water melons have also been injured by the excessive moisture. The best remedy for this is to pull off much of the old fruit and give the young buds a chance to ripen in the sunny weather that is always sure to follow a long period of rainy weather. The asparagus beds have been attacked this year by great numbers of beetles and they have seemed to be proof against air-slaked lime. Of course London Purple and Paris Green cannot be applied while the stems are being cut for the table; but after the plants have gone to seed they should be sprinkled thoroughly with these poisons to prevent a return of the beetles next year.

Digging Potatoes.

It is always a question whether to dig the early potatoes as soon as they are fully matured or to allow them to remain in the ground until the weather is cooler.

I have tried both plans and find that much depends on the season and way they are handled. If they have been planted reasonably deep and the season is dry, they will, in a majority of cases, be better left in the ground. There will be some loss from vermin and some will rot, but not as bad as when dug and placed in piles. But if they have been planted shallow and level cultivation has been given so that the tubers have formed close to the top of the ground and then the season is showery it will be better to dig, taking care to dry thoroughly. Put in the shade as exposure to the sun injures the quality, spreading out in a cool dry place where there is a good circulation of air. If potatoes are near the surface during the next month after they are matured they will be injured considerably, as they will soon scald. Frequent showers, sufficient to wet the soil down to the depth of the potatoes will, in many cases, induce them to germinate and this injures them sonsiderably. I have kept potatoes, digging them in August, by spreading them out thin in a loft where the sun could not reach them and yet there could be a full circulation of air, spreading them out thin, not over six inches thick.

If they are piled up they will rot badly and there seems to be no remedy. The last two years I have left my crop in the ground, digging the latter part of September, curing a day or two and then storing away. Very few rotted in the hill and occasionally a hill had started to growing. If they are dug it is quite an item to handle carefully so as not to bruise in any way, as this is often a cause of their rotting.

A plan is to have boxes or baskets and throw the potatoes into these as fast as they are dug, sorting them as they are are picked up. If a potato digger is used they can be sorted as they are picked up, as the small ones can be used to a better advantage in feeding to stock than to market or store away, and there is no time when they can be assorted as economically as when they are first dug. If dug early they should be put in a loft, if later let lay under a shade a day or two to dry out before putting away permanently.

If the tubers are not too near the surface and the weather is not too showery I should prefer to leave in the ground, but if growing near the surface and the season is showery I should dig.

If you have any article you wish to sell, advertise in FARM AND VINEYARD.

The June Report of the Statistician of the U. S. Department of Agriculture embodies returns of comparative acreage of cotton, wheat, oats, rye and barley, and of the condition of cotton, wheat, rye, barley, oats, clover, pasturage, apples and peaches.

The report includes a review of the crop situation in Europe, by our foreign agent in London; and various official statistics of several countries, showing estimated production of principal farm crops.

A statistical review of the resources and production and distribution of Chili, so far as such facts are recorded and available, is also presented

An emergency bulletin, covering the main facts in the life history of the hop plant louse, and the best remedies against its ravages, has just been is sued by the U. S. Department of Agriculture. The insect is appearing in alarming numbers in the hop regions of New York, and is causing considerable anxiety to the hop growers of Oregon and Washington also. The bulletin may be obtained by applying to the Secretary of Agriculture, Washington, D. C.

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PRUNING SHRUBS.

The English Idea as Expressed in Gardening Illustrated.

Separate the shrubs with which you intend to deal into those grown principally for flowering, many of which are deciduous, and those grown for their evergreen or ornamental foliage. Probably the majority of shrubs make their flower growth the previous year; consequently to cut back late in autumn or before flowering takes place in spring, simply destroys the whole of the season's flowers. As soon as possible after flowering is over prune all shrubs belonging to this class. Thin the branches where crowded and remove the old wood that has borne the flowers to make room for the growth of new shoots for the succeeding year. Forsythias, Deutzias, Weigelas, shrubby spiræas, genistas, lilacs, viburnums and many others may be so treated.

Berberis Darwini may be kept somewhat dwarf and yet flower freely if it is planted young and if the leading growths are shortened. The growth of rhododendrons cannot be cut away without reducing the number of flowers for the next year. On the other hand, if allowed to grow thickly in clumps without cutting, the inner and under growths soon have to succumb to the stronger ones.

Hardy azaleas do not grow so strongly as rhododendrons; consequently they are not so difficult to keep within bounds. Pruning is but little required. The same remarks apply to Sedums, Kalmias and Pieris (Andromeda) floribunda.

Most of the evergreen and ornamental foliaged section may with advantage be cut over occasionally in summer, or they may be pruned as each subject requires according to the position which it is meant to occupy. In mixed shrubbery borders each plant should have sufficient room, and those in the front line should be a dwarf growing character, or such as can be kept dwarf without being unsightly. Pruning should all be done with the knife or special shears for the purpose.

A Valuable Cherry.

Cherries of the Bigarreau class are distinguished from the heart cherries by their firmer flesh. The trees are of vigorous growth, with spreading branches and foliage that is soft, luxuriant and drooping.

THE WINDSOR CHERRY.

Notable among the newer cherries of this sort is the Windsor, a seedling originated by Mr. James Dougall, of Windsor, Canada. Its fruit is large and liver colored, and resembles somewhat Tradescant's black heart, ripening three or four days later than that variety. The flesh is remarkably firm and of rich quality. The tree is prolific and hardy. For market and for family use this is generally pronounced a valuable addition to the list of late varieties.

The Verbena Mildew.

The verbena mildew has been very successfully combatted at the Cornell experiment station with a solution of water in water of potassium sulphide, at the rate of a quarter of an ounce to the gallon. The plants were occasionally sprayed with the fungicide, and, while traces of the disease still appear at times, it is rendered practically harmless. This preparation has also been applied to cucumbers infested with the same or a similar fungus with very satisfactory results.

Mulching Lawns.

Thin, weak lawns, which scorch and turn brown with the heat of the sun, may be much benefited by leaving the cut grass on the lawn. The grass cuttings will soon wither and disappear, forming a beneficial mulch to the roots of the grass. This practice may be continued to the end of August. Grass that is constantly being cut soon shows signs of weakness unless helped in some way.

Flower and Fruit Notes.

Bed the callas out during the summer in good soil, thus checking their growth and giving them a season of rest.

The Duchess of Albany is a rose that has many advocates.

The best way to water a hanging basket is to plunge it into a tub of water until it is thoroughly soaked.

The fruit products of the United States exceed $180,000,000 annually.

July is a good month to prune the azalea, as this gives the plants time to make new wood and set their buds, says a California grower.

A deep loam and a sandy soil are suited to the cherry.

Fine, rich compost is an excellent fertilizer for flowers.

Peach borers ought to be hunted up and destroyed.

Cannas require rich soil and plenty of water.

For Insects on Rose Bushes.

The most effective insecticide that the Rural New Yorker knows of is the old Gishurst compound. Two ounces dissolved in a gallon of water will destroy lice (aphidæ), thrips, slugs and, in short, all sorts of insects that infest rose bushes except rose bugs. It is claimed also that it will destroy mealy bug, scale and mildew. It is for sale by most seedsmen. The authority quoted says: "The only remedy we have found for rose bugs is pyrethrum or buhach powder. Use two heaping tablespoonfuls to two gallons of water and spray the infested plants."

The Peach Tree Borer.

There are two methods of preventing injury from the peach tree borer. One is mounding the lower parts of the trunks with earth or wrapping them with some substance to prevent the moth from laying eggs there, and the other is to repel the moth by washes. According to Orchard and Garden the first method is apt to make the bark tender and is too laborious. For the second, thin one quart of soft soap with ten times its bulk of water, then add one pint of crude carbolic acid. Apply latter part of June and July with a brush to the base of the tree.

FARM AND GARDEN.

OBSERVATIONS WORTHY OF NOTE IN RURAL AFFAIRS.

The Improvement of Country Home Grounds—How the Advantages of Shade and Seclusion May Be Secured by a Judicious Use of Trees and Lawn.

Owners and occupants of farms can improve and plant the home grounds and scarcely trench on their home acres for farming. They need not fall into the mistake which some make in their endeavor to save every square rod of ground by placing the dwelling nearly on a line with the boundary of the public highway and converting the highway into a barnyard.

All the advantages of shade and seclusion, says Country Gentleman, may be secured by a judicious use of trees and lawn, with near proximity to the public road, by an arrangement like that represented in Fig. 1. The dwelling is placed quite near to the road, but planted with shade trees enough to give seclusion. The carriage entrance is on one side, while a shorter footwalk on the other side gives ready access and exit. In the rear of the dwelling the more formal and regular planting may be orchard trees, with the more symmetrical growers along the carriage way to harmonize

FIG. 1—IMPROVING COUNTRY HOME GROUNDS.

the two kinds of plantings. These may be the more regular forms of pear and cherry trees, and the orchard is laid out in the more ornamental hexagonal planting. The barn is farther in the rear, but easily reached from road and dwelling, or a separate farm road may be placed farther to the left.

In Fig. 2 another similar plan is represented, but with more ornament than finish, and with more ready access from buildings to road. It needs but little additional explanation other than that the broad beds may be planted with a few handsome shade trees, or with a larger number of smaller trees and large shrubs; or the planting may be exclusively of shrubs of various sizes. They sufficiently exclude the view from the dwelling to the public road, while the openings between give a sufficient view and afford a short entrance when desirable. It will be observed that neither of these plans occupy any considerable portion of the farm lands, while they give a good opportunity for landscape adornment, and shut out the dust from passing vehicles.

FIG. 2—IMPROVING COUNTRY HOME GROUNDS.

If a simple symmetrical exterior is given to the barn buildings which are partly hid by trees, these will aid in a pleasing view from the grounds and dwelling. The ornamental trees should be such as are perfectly hardy, and which will grow freely when standing in grass; and the larger and smaller shrubs should possess a similar hardy character, a quality most readily found in those commonly known, such as the Tartarian Honeysuckle, the three species of Philadelphus, the Barberry, Snowball, Lilacs, several Spiræas, etc.

How to Use Superphosphates.

Nitrate of soda is sold by all fertilizer firms, usually in 200 pound bags. In order to insure an even distribution it is well to mix it with two or even three times its bulk of soil or earth of some kind. Commercial superphospate consists of ground bones, bone black, phosphorite or South Carolina rock treated with sulphuric acid, so that a portion of the insoluble phosphoric acid they contain is rendered soluble in water. Chemical superphosphate is a soluble salt composed of one equivalent of phosphoric acid, one of lime and ten of water, and is the characteristic ingredient of the commercial superphosphate of lime. We should never supply a superphosphate alone, says Rural New Yorker. It would injure every seed with which it came in contact. It should be used as a part of a complete fertilizer or extended with soil.

The Critical Season for Bees.

The spring is the most critical season of the year for bees. More colonies of bees are lost from the 1st of March to the 1st of June than during any other period of the year. Starvation and dwindling and dysentery, caused from impure food, slay their thousands. Be as sure that your bees have a sufficiency of food as you are that your cattle, horses, sheep and hogs have something to eat, and you will come out all right. The old policy of putting bees in a box and setting it on a stand, and virtually saying to them, "Live if you can, and die if you must," is no longer practiced by sensible apiarists, says an Ohio apiarian in The Farm Journal, who claims that the preservation of the life of a single healthy bee in March is worth a score of the same kind in June.

Dressing Pastures with Lime.

An English agricultural exchange tells very truly how there occurs a gradual elimination of lime in pasture lands, even in limestone districts. Want of lime is indicated by coarseness of herbage, sourness and a want of clovers. The grass grows rank, and the finer species are ousted by inferior descriptions. It is not so much a deficiency of quantity as of quality which is discernible. Marl is a suitable dressing for such land, but in districts where this substance is not available burnt lime may be used with equal if not superior results. The effect of a dressing of 150 to 200 bushels of quicklime is seen in an increased growth of white clover and leguminous herbage, and in a general improvement of quality in the grasses.

The authority quoted inclines to the system of making one large heap of lime conveniently near the field and applying it after slaking. The small heap system, which is admirable in the case of arable land, is unsuitable for grass, because the grass is burnt on the site of every heap. This we should avoid by making a large heap, as recommended. The best periods are midsummer, after the fields have been spring and summer grazed, and before the period of autumn growth commences; or the work may be delayed until late in the autumn. After spreading the surface should be thoroughly chain harrowed, so as to brush in the lime to the roots, and the effect will show itself in the following summer and continue for from seven to twelve years.

FARM AND GARDEN.

INFORMATION OF PRACTICAL IMPORTANCE TO RURAL READERS.

Observations on Cutting Seed Potatoes Made in a Bulletin Issued by the Virginia Experiment Station—Rotating Method of Cutting the Tuber Illustrated.

It is true that whole medium or large sized potatoes usually give an increased yield over smaller tubers or small cuttings, and also show a gain of a few days in edible maturity. But they also show a very decidedly larger yield of small or unmerchantable tubers, and increase the cost of seed many fold, varying of course with the size of tuber used. This may be illustrated by stating that seed cut to "two eye" pieces requires 8 to 10 bushels to plant an acre if the pieces are placed 10 to 12 inches apart in the row, and the rows 2½ to 3 feet apart. Whole seed planted in hills 12 to 20 inches apart will require 40 to 60 bushels to plant an acre. The conditions desired in growing potatoes is to place the plants so as to occupy the entire ground, having them just far enough apart to secure good individual development of tubers. This can be best accomplished by small cuttings planted closely—say, rows 2½ feet apart and planted 10 inches apart in rows. With Early Ohio, Early Hebron, Sunrise and several other varieties so planted nearly the entire yield will be of marketable size.

The often practiced method of cutting the tubers in two lengthwise or crosswise at random and then cutting these pieces into smaller portions is reprehensible. There is in our estimation but one proper method of cutting seed, and we believe that growers who have once tried this method will assent to the above statement.

The method of cutting which we allude to is to take the tuber in the left

ROTATING THE TUBER AND CUTTING THE EYES.

hand, holding the stem end downward and toward the operator. Turn it so as to bring the lowest eyes toward you, then with a sharp thin knife cut them out, making a curving downward stroke extending to the center and base of the tuber. Turn tuber slightly to bring other eyes toward the operator, and repeat the operation. The eyes of a potato are arranged more or less regularly around a spirally ascending axis, and by turning the potato slightly after each operation they can be cut away in compact pieces so as to give each one a nearly equal proportion of the tuber. This, of course, cannot be done at the seed end, and when the operator has removed the eyes as close as practicable to the seed end a good practice is to cut it down through the center.

This method of rotating the tuber and cutting the eyes away successively is shown in the cut. There, however, the illustration represents the pieces cut to one eye; but the system of cutting works equally well with the two eyed cuttings, and, for ordinary seed, the bulletin quoted from advises about that size. If the seed is cut in advance of planting, to save time in the rush of work, the pieces should be thoroughly dusted with plaster to prevent evaporation.

Our Farm Animals.

According to the annual report from the agricultural department at Washington the number of horses on farms is 14,056,750, with an average price of all ages at $67. The number of mules is 2,286,532, having an average value of $77.88. The number of milch cows is 16,019,595, an increase of 66,708 from last year. The average value per head is $21.62. There is a tendency to increase of dairying in the south, especially in the mountain region. Other cattle aggregate 36,875,648, including those on ranches. The highest value is $28.64, in Connecticut; the lowest $8.46, in Arkansas. The number of sheep is 43,431,136. The average value is $2.51, an increase of more than 10 per cent. All other kinds of farm animals have declined slightly in price. A tendency to increase of numbers is seen in most of the states. The aggregate number of swine is 50,620,106, showing a decline of nearly 2 per cent. The average value is $4.15, a decrease of 57 cents per head.

Advice About Fertilizers.

Manuring crops in the hill is simply to concentrate the fertilizer in a small space. Such a plan will answer if there is an insufficiency of the material used, but as the roots of plants spread over a large area in search of food it is better to broadcast all manures and fertilizers, thus not only giving greater feeding capacity to the roots, but also permitting of a more intimate incorporation of the ingredients with the soil during cultivation of the crop. The Philadelphia Record, authority for the foregoing, further says: Mix plenty of land plaster with your manure. Plaster absorbs gases, arrests the escape of ammonia, and is of itself an excellent fertilizer. For grass crops and as a special fertilizer for clover it is unexcelled. It is also cheap compared with its real value. Used in the hills with corn, plaster assists in attracting both moisture and ammonia from the air and gives the young plants a good start.

Statements About Poultry.

Mr. James Rankin, who has made the artificial incubation of poultry a success, told at a farmers' meeting in Boston, not long ago, that he never sold a broiler in his life. He said: "The broiler age is just the time when all the danger of mortality has passed. The last two or three pounds can be put on much cheaper than the first. Whoever raises beef or pork knows that this is so. The price of a good roaster is higher than the price of a good broiler. So we hold our chickens until they are four and one-half months old, and our pullets until they are a little over a year old."

Mr. Rankin estimated his loss of ducks at from 3 to 5 per cent. in raising, and chickens from 5 to 10 per cent. He thought that fifty cents is a moderate allowance for growing a pullet until she begins to lay.

Things Said and Done by Horticulturists.

Professor Lazenby bagged some sweet cherries last year just after the fruit had set, and kept them covered until they were ready to pick. The fruit developed in this way was larger and heavier than that which remained uncovered, the skin was more tender, the general appearance particularly fresh and the color notably brighter.

A decided advance in the way of black raspberries has been made in the Progress. Mr. Charles A. Green, in his Fruit Grower, says that it is of good size, jet black and of highest quality; canes of very strong growth, ironclad hardness and remarkable in yield. In vigor and growth it excels Gregg, and in hardiness it has no superior.

The Blonde Blockhead or Sunset lettuce is said to be crisp, buttery and brittle. It is a "perpetual lettuce and goes to seed reluctantly."

THE POT DIBBLE.

A Useful Tool for Plunging Pots in Summer to Protect from Angle Worms.

The pot dibble, of which an illustration is here reproduced from Popular Gardening, is used in plunging pots in summer in the line of flowering plants, strawberry runners, etc. The chief value claimed for it is the remedy it provides against angle worms entering the pots from the drainage hole below, a point that will be highly appreciated by all who know how troublesome these worms usually are in plunged pots. In the drawings A shows the tool as turned by a cabinetmaker from a block of maple wood six inches square and twenty-two inches long, although with considerable care one could be shaved down with a draw knife. The nearer perfectly round it is the better will it be suited to its purpose. The tool is completed by the addition of a handle as shown, and this might be made from an old spade.

A DIBBLE FOR PLUNGING POTS.

Figure B shows the use of the tool in the case of a geranium pot plunged in soil. The pot in this instance was of a size that required the dibble to be thrust into the plunging soil to its entire length. In putting the pot down it should be pressed in rather firmly. Besides getting the best of angle worms, two other important gains are secured, namely: The pot is afforded perfect drainage and the trouble of "rooting through" the drain hole of the pot is overcome.

Figure C represents the use of the dibble for a smaller sized pot. Coming to a point as it does, the tool can be used for pots of the smallest size quite as readily as for larger ones. In getting ready for plunging pots by this means, the soil should first be worked over to a depth equal to the length of the dibble, otherwise it will be difficult to thrust it into the earth. In pressing it down the weight of the body may be applied through the foot placed on top of the dibble. This tool also comes into play at times in transplanting small shrubs, vines, etc.

The Clotilde Soupert Rose.

This variety, originated by Soupert and Notting, of Luxemburg, is a cross between the polyantha variety, mignonette and Mme. Damaizin, a tea. It is a vigorous plant and most abundant bloomer, and the flowers are produced continuously for a great part of the summer and autumn. The flowers are of good size and very fragrant, in this respect as well as in the delicacy of its coloring, tracing to its tea origin; on the other hand its profuse blooming habit is inherited from its polyantha source. The other petals are at first a pure, pearly white, and the center ones rose shaded, with a soft carmine. Vick recommends this variety for planting in masses or beds and for winter forcing, and also as a window plant.

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The blush rose—For brides.
The thorn rose—For scolds.
The tea rose—For old maids.
The prairie rose—For settlers.
The hedge rose—For the poor.
The cabbage rose—For tailors.
The Banksia rose—For bankers.

Garden Gleanings.

The bearing season of currants may be prolonged by a heavy mulch.

Primulas seed may be sown now for winter flowering.

Azaleas may be summered in a well shaded spot out of doors.

Berbevis Thunbergii is a desirable ornamental shrub.

Always cut cucumbers from the vines with a piece of the stem attached.

After the flowering season most of the bulbous plants are anything but attractive. These may be lifted as soon as leaves begin to wither, laying them in clumps in a shady place, with some soil over their lower parts to insure perfect ripening. Store in a dry place until another planting season.

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ERIE, PA., JULY, 1891.

Number 1. Volume V.

The FARM AND VINEYARD is now in its fifth year of success, and our aim is to make the fifth volume the best ever offered to our horticultural and agricultural friends. We are still taking subscriptions at 25 cents a year, but shall soon go back to our regular rate, 50 cents per year.

THE WIZARD'S LATEST.

Edison Will Exhibit Several Astonishing Inventions at the World's Fair.

Thomas A. Edison, the famous electrician and inventor, is preparing to astonish the world, by the exhibit he will make at the World's Fair in 1893. "I shall have two or three things to show," said he recently, "which I think will both surprise and please the visitors to the electrical department of the Exposition, which, by the way, I am fully convinced, will be a great success. Two of these inventions are not ready to be described, or even characterized. The third, however, is so nearly perfected, that I do not hesitate to say something about it.

I hope to be able by the invention to throw upon a canvas a perfect picture of anybody, and reproduce his words. Thus, should Patti be singing somewhere, this invention will put her full length picture upon the canvass so perfectly as to enable one to distinguish every feature and expression of her face, see all her actions and listen to the entrancing melody of her peerless voice. The invention will do for the eye what the phonograph has done for the voice, and reproduce the voice as well, in fact, more clearly. I have already perfected the invention so far as to be able to picture a prize fight—the two men, the ring, the intensely interested faces of those surrounding it—and you can hear the sound of the blows, the cheers of encouragement and the yells of disappointment. And when this invention shall have been perfected," said Mr. Edison with the trace of enthusiasm's glow in his face, 'a man will be able to sit in his library at home, and, having electrical connection with the theatre, see reproduced on his wall or a piece of canvas the actors, and hear anything they say. I can place one so it will command a street corner, and after letting it register the passing sights for a time, I can have it cast them on a canvass so that every feature and motion of the passers, even to the twitching of the face, can be seen, and if a friend passed during the time, you may know it. This invention will be called the 'Kinetograph.' The first half of the word signifies 'motion,' and the last 'write,' and both together mean the portrayal of motion. The invention combines photography and phonography.

Mr. Edison occupied nearly an acre with his exhibit at the Paris Exposition. As he wishes to show at Chicago all that he exhibited at Paris, and numerous other things besides, he is desirous of being accorded a greater space in 1893. The electrical exhibit is expected to be the wonder of th Exposition.

Our Sewing Machine Offer.

We have made arrangements by which our subscribers, only, can purchase one of the above sewing machines for the small sum of $18.00. This is one of the most approved styles of lock stich sewing machines, and is sold in different parts of the country at from $40 to $60. These machines are well made and handsomely finished with black walnut furniture, as shown above, and each machine contains a full set of the latest improved attachments, instruction book and the manufacturers guarantee for five years.

Buckwheat bran contains considerably more nutriment suitable for making milk than wheat bran.

If you have anything for sale advertise in the FARM AND VINEYARD. We guarantee good results, provided you offer the right articles. Many of our readers write and inquire where they can purchase full blooded cattle, poultry, pigeons, dogs, sheep, pips, etc., hence our offer to insert breeders' cards at the low rate offered on page 5.

The Army Bean.

BY ALBERT H. RHODES.

For the FARM AND VINEYARD.

How to grow, harvest, and cook the Army Bean is something quite important for farmers to know. Many times when potatoes are scarce, especially, the bean becomes a necessity, and even when they are plentiful, a dish of baked beans are not to be refused, especially by the hard worker, who requires food of staying qualities There are innumerable kinds of beans of all colors and all sizes, from the Lima bean down to the Army bean, which is the bean par excellence, and the one I propose to consider in my present article. Now, first, do not labor under the illusion that worn out soil will be good enough for beans. When, say half a century ago, this remark was common, speaking of worn out farms or fields, "they will not raise white beans." Now I do not suppose that colored beans require a stronger soil than white ones, but be that as it may, the above expression was a common one in the old lang syne days. But a greater mistake never was made than to plant beans on a poor, worn-out soil, and look for a paying crop in harvest. Beans require as good soil as for corn, and when you have such a soil in nice tilth, about the last days of May or June 1st you can prepare to plant your crop with a certainty of (at least a reasonable degree) securing a good crop. First, be sure your beans are not too old and that they will all grow. You can make sure of this by putting a dozen between two pieces of turf and noting the failures, if any, and so make it sure before planting. The small white variety is the best to grow for market, or even for home uses, and one variety on a farm is enough at a time, as you will be apt to get them mixed, thus depreciating their value in market. Mark as for corn, only two feet apart, and plant twelve inches apart in the row, putting five beans in the hill. When your beans commence to get foul cultivate as clean and hoe as nicely as for any other crop. When your beans commence to turn yellow and the pods are all full do not wait for them all to ripen on the hill, as there will always be more or less loss from mould on the earliest pods resting on the ground. Having secured stack poles which will be sufficient for your purpose you can commence to pull your beans. The stack poles should be from the top of some limby tree like the hemlock, about seven feet high, and well planted in the earth to secure them from blowing over in the gales so common this time of year. Pull your beans and carry them to the stack poles and commence at the bottom tier of limbs and place them with the roots to the pole, placing all on your pole possible, as they will dry and the winds will prevent them from settling down on each other, thus preventing moulding. Thatch them on top with straw or grass and leave them till quite dry. Some nice dry day take your wagon with the box on and draw them to your barn and thresh them either with a flail or with a thresher, as your quantity will determine. Run them through your fanning mill and sack them for market. And now as to cooking them. Parboil and boil them quite soft. Then put them into your bake dish and lay strips of good sweet pork or bacon over them. Season them properly and brown nicely on top, and you will have a feast fit for a king.

ELKCREEK, June 22.

The *Rural and Poultry World* is a very neat and practical journal, published at 50 cents a year. Anticipating the wants of our readers, we have made arrangements to supply the *Rural and Poultry World* and FARM & VINYEARD, both one whole year for 50 cents.

Pastures for Cattle.

Some pastures, while they may seem full and rich with good grasses, do not seem to supply cattle with the necessary amount of nourishment suitable for hot weather. Occasionally we find our cattle grazing on a flush pasture, and yet they do not seem to respond properly in flesh. There is no surer sign that such pastures are lacking in something. The soil is exhausted, and the land wants either manure or clover. It is possible for grasses to grow ever so tall and flush-looking, and yet be no better for feeding purposes than so many lily flags. The best thing that we can do in such cases is to renovate the soil, and supply it with the lacking elements. Spread the pastures well with manure ; plow it in if necessary, and sow it to clover.

Don't subscribe to any paper till you have written to us for our prices. In most all cases we can give you two papers for the price of one.

"Mary," said Mrs. Brown, "has Mrs. Jones been over to borrow anything this afternoon?" "No, mum." I was afraid she had been. I met her this morning and she said that my boy Jimmy was the nicest little boy in the block, and wanted to know if he couldn't come over to-morrow and play with her little girl."—N. Y. Recorder.

Special Clubbing Offer.

If you wish to take any other paper or magazine in combination with FARM AND VINEYARD, it will pay you to write to us and get our prices. We have secured special rates for subscribers of FARM AND VINEYARD, which, if taken advantage of, will allow you, in most cases, to get two papers for the price of one.

The following are a few of the leading papers and magazines. A complete list will follow :

		Farm and Vineyard.	Our Price for Both
The Rural New Yorker, price	$2.00	$ .50	$1.90
" American Garden, "	2.00	.50	1.90
" Farm Journal, "	.50	.50	.50
" Chicago Weekly Times "	1.00	.50	1.00
" American Rural Home "	1.00	.50	1.00
" Amer. Sheep Breeder, "	1.00	.50	.90
" Cleveland Leader, "	1.00	.50	1.00
" Yankee Blade, "	1.00	.50	1.00
" Fanciers Review, "	.35	.50	.50
" BuffaloWeekly Express"	1.00	.50	1.00
" " Sunday " "	2.00	.50	1.75
" Farmers Record, "	1.00	.50	.80
Devoted to Farmers' Organizations and Farm Topics.			
" N. Y. Weekly World, "	1.00	.50	1.00
" Cosmopolitan, "	2.40	.50	2.00
" LadiesHomeCompanion"	.50	.50	.65
" Western Garden, "	.50	.50	.50
Our Country Home, "	.50	.50	.50

THE CHICKEN BUSINESS.

How to Start in to Make Poultry Raising Pay.

Let us imagine two energetic young people who are going to invest their savings in the "chicken business." One, a girl, has $50, and wants to know how to spend it. The other has $500, and has also much grander ideas.

If I were the fifty dollar girl I would buy hens likely to lay, and work for winter eggs and pure bred early chickens. I would build as cheaply as possible a warm house in two sections, each arranged to shelter fifteen hens. The house should be lined with a thick layer of corn husks, fastened in place by laths, and it should have a window in the eastern slope of its steep roof—a second hand hotbed sash, if I could find one. I would consult the kindest and most knowing farmers in the country side about lumber and workmen.

Such a house, 20 feet by 10, with a partition of wire netting, could be built of rough boards for $15; $5 more would build outside fences. Ten dollars should be spent in food; $10 more for a trio of really good birds of a breed I had chosen as my specialty, and the remaining $10 should buy twenty or thirty pullets and young hens, of any kind, sort or description, provided only they had "the laying look." As those barnyard hens necessarily would be brought from all quarters, they should not at first go near the pure bred stock, lest they should bring contagion of some disease. Often roup enters clean yards with new poultry. I trust this imaginary girl would take the advice of the reliable breeder of whom she bought her trio, unless she thoroughly understood the question of mating that especial breed. There are queer ins and outs about breeding that he would know, and that are not easily learned by reading.

Then, provided with her "plant," she should give earnest care to coaxing the common hens to lay. They must be "forced," as it is called, by much nitrogenous food, to lay sooner and more than is normal, but she must beware of so treating the breeding stock. She ought to have confabulations with the most successful henwife in her neighborhood, and learn how those full baskets of eggs have been gained. She should keep her house comfortable and clean, and give her hens all the fresh nests, nest eggs, dust baths and gravel that they need. They ought to pay for their food long before the ten dollars' supply is exhausted.

In winter there is more danger of underfeeding than of the reverse. My hens always laid best when they had free access to wheat screenings. It is not safe, however, to let hens help themselves to whole corn. If that is the staple of their diet they should be made to hunt for it. A fair share of meat, plenty of wheat or buckwheat—the best of all grains for poultry—and frequent feasts of cabbage, turnips or onions, will get hens into condition to lay abundantly later in the winter, even if they cannot be induced to do so in January. If the kitchen authorities are favorable she should keep a big pot-au-feu, in which all the table scraps should be cooked with coarse meal for the hens' breakfast.

On the other hand, were I the 500 dollar girl or boy I would, if possible, take a trip to the excellent brooding houses near Boston, and see just how the "broiler factories" should be managed. Then I should consult a nursery gardener about plans for a building which would be a brooder house below, with benches above for forcing plants. A good little house for 500 chicks, with capital heating apparatus, can be built for $100. The additional cost of the green house arrangements would be considerable, but it would be worth while to have them, for plants and little chickens need the same pure warm air, cleanliness and unremitting watchfulness. They fit in well together if one uses plenty of wire netting.

It is too late in the season now to begin work with incubators and brooders. The highest prices are missed unless the machines are started in November, although chickens hatched in February will bring fair prices in May, and the learning "how to do it" this year is the only way to do it just right in another.—Miss E. K. Winans in American Agriculturist.

Points of Interest.

The best way to secure a herd of grade cows of any breed is to raise them yourself where this is possible. Get a pure blood male and begin, and in less time than seems possible you will have your herd around you, produced to order under your own eye.

Mr. C. F. Mills is now president of the American Berkshire association. This association is to give liberal encouragement, pecuniarily and otherwise, to the display of American Berkshires at the World's fair at Chicago.

If an animal is either constipated or loose in its bowels, if it is off its feed, looks thin and bad, and you cannot tell what is the matter with it, change its diet. That alone in many cases will effect a cure. Ruts are as bad for animals as for people.

An experienced horseman says that diluted foods will prevent horses from having colic. He recommends chopping up corn and cobs together as a part of the animal's diet, so that it will swallow a portion of the cob. A mixture composed of wheat, bran and oats ground with corn is also highly recommended when fed with hay that has been chopped and moistened.

Grapes for Careful and Careless Growers.

To those who prize quality in grapes, even with the penalty of somewhat diminishing returns, and are willing to devote the needful care and labor, the following may be expected to yield satisfactory results, according to President Lyon: Jessica, Lady, Early Victor, Delaware, Brighton and Empire State, and on suitable soils, and when the season will suffice to mature them, Iona and Excelsior.

For planters who require varieties which will mainly "take care of themselves" and still yield at least some returns, even though of lower quality: Lady, Moore's Early, Worden, Hayes, Niagara, when the season will suffice to ripen it. For the market grower who wishes to work for customers who value quality, and are able and willing to pay for it: Early Victor, Delaware, Brighton, Ulster. For growers for average city or village customers who generally "buy by the eye:" Moore's, Worden, Concord, Niagara.

Muslin Covers for Hot Beds.

Muslin is often substituted for glass as a covering for hot beds. Some people prepare the cloth by soaking it in a solution of sugar of lead, but applying a coat of boiled oil to the surface with a brush while the cloth is new is thought to be a better application for the purpose. Covers made of closely woven heavy cotton cloth or light duck will be more flexible, and if stretched rather tightly over the beds will be sufficiently protecting. Some of the largest growers of sweet potato plants cover their heating beds by sewing together two widths of 4-4 coarse brown muslin, making covers six feet wide, and use them successfully without any waterproofing substance whatever.

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NIAGARA All old and new varieties. Extra Quality. Warranted true. Lowest rates. Introducer of the EATON

Also other SMALL FRUITS. New Descriptive Catalogue Free. T. S. HUBBARD CO., FREDONIA, N.Y.

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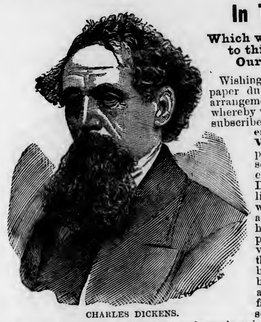

CHARLES DICKENS.

Wishing to largely increase the circulation of this paper during the next six months, we have made arrangements with a New York publishing house whereby we are enabled to offer as a premium to our subscribers a **Set of the Works of Charles Dickens, in Twelve Large and Handsome Volumes**, with a year's subscription to this paper, for a trifle more than our regular subscription price. Our great offer to subscribers eclipses any ever heretofore made. Charles Dickens was the greatest novelist who ever lived. No author before or since his time has won the fame that he achieved, and his works are even more popular to-day than during his lifetime. They abound in wit, humor, pathos, masterly delineation of character, vivid descriptions of places and incidents, thrilling and skilfully wrought plots. Each book is intensely interesting. No home should be without a set of these great and remarkable works. Not to have read them is to be far behind the age in which we live. The set of Dickens' works which we offer as a premium to our subscribers is handsomely printed from entirely new plates, with new type. The twelve volumes contain the following world-famous works, each one of which is published *complete, unchanged, and absolutely unabridged:*

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OUR MUTUAL FRIEND,
PICKWICK PAPERS,
BARNABY RUDGE AND CHRISTMAS STORIES,
OLIVER TWIST AND GREAT EXPECTATIONS,
THE OLD CURIOSITY SHOP AND THE UNCOMMERCIAL TRAVELER,
A TALE OF TWO CITIES, HARD TIMES AND THE MYSTERY OF EDWIN DROOD.

The above are without question the most famous novels that were ever written. For a quarter of a century they have been celebrated in every nook and corner of the civilized world. Yet there are thousands of homes in America not yet supplied with a set of Dickens, the usual high cost of the books preventing people in moderate circumstances from enjoying this luxury. But now, owing to the use of modern improved printing, folding and stitching machinery, the extremely low price of white paper, and the great competition in the book trade, we are enabled to offer to our subscribers and readers a set of Dickens' works at a price which all can afford to pay. Every home in the land may now be supplied with a set of the great author's works.

This entire set of **TWELVE VOLUMES** are now offered by us for **One Dollar only**, including a Year's Subscription to FARM AND VINEYARD, or given **FREE** with 3 subscribers at 50 cents each, and to every person getting up a club of 10 subscribers at our clubbing rates of 25 cents each, we will **Present the whole Set of Twelve Volumes FREE.** Address,

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$5.90 Do not confound these with cheap machine harness. If you want such, our machine—the best in the world for the money—costs $5.90.

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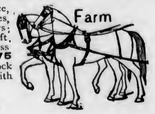
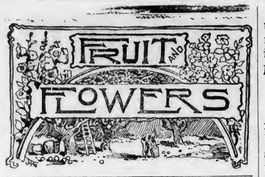


Libertyville Harness Co., Libertyville, Illinois.

Mention FARM AND VINEYARD.



THE PROPAGATION OF ROSES.

The Four Methods by Cutting, Budding, Grafting and Layering.

The four methods used in propagating roses—by cutting, by budding, by grafting and by layering—rank in importance in the order named. Ellwanger, in his work, "The Rose," considers these as follows:

Plants grown from cuttings are most useful for general purposes, and the greater number of choice varieties can be grown in this way without difficulty, but there are some kinds which root with difficulty; these sorts can only be profitably grown by budding or grafting. Cuttings can be made at any time of the year. The sorts most difficult to root are the varieties of moss, most of the summer roses, and certain varieties of hybrid remontants belonging to the Jules Margottin, Barrone Prevost and Baroness Rothschild families. All of the tea and monthly roses, with few exceptions, root and grow freely from cuttings. Besides using green wood, some propagators make cuttings from hard wood—that is, shoots thoroughly ripened, taken in the autumn. Manetti cuttings are always made from wood taken in autumn, and the various varieties of prairie roses are often grown in this way.

By budding are grown varieties difficult to root from cuttings. Varieties like Baroness Rothschild, Mabel Morrison, Marquise de Castellane, Mme. Boll, Marguerite de St. Amande, etc., are as yet almost indispensable, but no nurseryman would long grow them from cuttings. There is another class of roses often advantageously grown by budding. these are varieties of moderate growth like A. K. Williams, Horace Vernet, Mme. Victor Merdier, Mlle. Eugenia Verdier, Marie Baumann, Xavier Olibo, etc. Budded plants are not desirable for inexperienced amateurs, since novices do not detect the suckers which, not infrequently, come up from the roots, and if not cut away ultimately choke the plant. Budded plants are also more frequently killed by severe winters than plants on their own roots.

Propagating by grafting is profitable when done in winter under glass. Propagating by layering is a slow method and but little used.

Peach Yellows.

The first appearance of the true yellows in bearing peach trees is usually exhibited in the premature ripening of the fruit. Instead of being delicately marked with minute crimson dots or showing masses of color like the ruddy cheek of a healthy peach, the surface is coarsely blotched with red and purple spots. These extend to the pit and give to the peach a mottled or speckled appearance unlike that produced by any other disease. Premature ripening and an unfavorable appearance of the fruit may sometimes occur from other causes, but where the symptoms above described are found with or are followed by the striking out of numerous unnatural shoots from the main branches, the evidence of yellows is unmistakable. These shoots are long and slender and usually issue from the upper side of the branches. They have a sickly look, though tough and elastic, and sometimes start in clumps from the old limbs. The entire foliage of the tree turns yellow prematurely, and its usefulness is ended. The only remedy known is to cut down and burn those affected to prevent the spread of the disease.

Fuchsias as Climbers.

There is certainly no purpose for which many species and varieties of fuchsia are better suited or in which their beauty is seen to greater advantage than when they are used to clothe the rafters and pillars of the greenhouse. So general is the practice of growing them as ordinary bush plants in pots that one rarely sees this method of cultivating them adopted, nor does it seem to be known how well it is adapted to their style of growth and to the display of their graceful, pendent flowers. One of the most beautiful effects is obtained by thus training several species and varieties of fuchsias.

FUCHSIA DEPENDENS.

Fuchsias are almost entirely known and represented in private gardens by the innumerable varieties that have been raised by the crossing and intercrossing of species and their progeny. A long course of selection and hybridization extending over fifty years has produced forms which in size and brilliancy of color undoubtedly surpass the original species. But that the latter have not been surpassed in elegance, delicacy of coloring and real beauty will be the opinion of most of those who have seen and grown them. A comparison, for instance, of the species depicted in the accompanying plate—F. dependens—with one of the double flowered varieties which represent the florist's ideal will show how much is lost by those who exclude the original and unaltered types from their gardens. For the purpose at present in view there are many of both kinds that may be used, the chief necessity being that they should be of robust growth.

Worthy of Note.

Farm Journal advises painting knots on cherry and plum trees with kerosene as soon as these appear.

The Clematis provides a handsome climber for arbors and verandas.

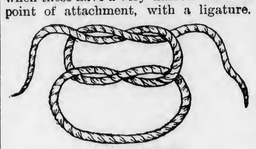
It is claimed that freshly laid sod is much more likely to succeed if covered with about an inch of fine soil. This will save it even in a dry time, when otherwise it would fail to get a good start.

The acreage of bearing vines in California in 1890 was 155,272 acres. New York comes next with 43,350 acres, then Ohio with 28,087 acres; Missouri, 10,000 acres.

REMOVING WARTS ON ANIMALS.

What a Veterinary Surgeon Advises in the Mark Lane Express.

Warts growing on the udder of cows or elsewhere on cattle are best removed, when these have a very narrow neck or point of attachment, with a ligature.



A LIGATURE KNOT.

Caustic agents are horribly slow and uncertain, and, in the end, troublesome to both owner and patient, so that there are very few instances where their use is to be recommended. Growths in which the base is diffuse, and round which it is impossible to get a ligature, should be dissected out or removed with the hot iron; but in all cases where practicable the ligature is best, as the excrescence is less likely to grow again when removed in this way. The action of the ligature is to cause constriction, and deprive the growth of the blood supply by which it is nourished, and when this is done it dies and drops off.

Large growths have a correspondingly large vessel of supply, and when these are removed with the knife, unless the vessels are picked up and tied or seared with the hot iron, the hemorrhage is frequently considerable and often very troublesome to the amateur surgeon. With the ligature there is none of this,

THE DOUBLE HITCH.

and if the knot known as the double hitch is employed very large warts may be taken off without much difficulty, even when the attachment is far from being narrow.

The success attending this method depends entirely on the tightness of the constriction, for unless the blood supply be entirely cut off the growth will not atrophy. Therefore we must have no granny's knots or others that will slip, but something that can be drawn very tight and that will not become loose. The double hitch is perhaps the best, as it requires no tying, and can be tightened by drawing in the free ends. The ends being within the two rounds, are pressed upon by the connected portion, and kept firm so that it cannot slip. Moreover, when the ends are left long it can be drawn tighter from time to time as it cuts into the substance of the wart.

The Best Honey Plants.

At the late annual convention of the New York beekeepers among questions of importance discussed was the one of honey plants. As is usual when this topic is introduced considerable difference of opinion prevailed. The majority, however, favored alsike clover for beekeepers. One member, who has grown it since 1882, claimed that it failed to secrete honey only once during that time, and it was a season when white clover also failed. He not only prefers the alsike to white clover for honey, but said that it makes the best fodder for sheep and cows. He sows it with red clover and timothy, both for honey and hay, as it is liable to lodge badly if sown alone. Another member, who indorsed the foregoing and who now sows alsike instead of red clover, found the honey from it as good in quality as the white clover honey. He did not think it yielded as large a crop of hay, but it is of better quality. In regard to that much advertised Chapman honey plant, the opinion appeared to be that it is a hard plant to grow and not so profitable as the clovers. Bees, it was told, work well on alfalfa when the circumstances are all favorable, but the various experiences related did not favor alfalfa as a honey plant.

Smut of Oats Prevented.

An experiment, conducted at the Ohio experiment station and just reported, in steeping oats in hot water indicates that by this method the greater portion of the loss from the smut of oats may be prevented. The process, briefly stated, is as follows: Have two vessels, in one of which water is kept warmed to about 120 degs. Fahrenheit, and in the other to as nearly exactly 135 degs. as possible. Have a basket of wire netting, or a loose splint basket covered with cloth. The water baths must be large enough to admit this basket. Fill the basket with seed grain and immerse it in the cooler bath, keeping it there and stirring it around until all the grains are warmed, then lift it out and plunge it into the hot bath, where it should remain from eight to ten minutes, being stirred or agitated meanwhile. Then remove it and dip it into cold water, or spread the grain out and throw cold water over it, after which dry it sufficiently for sowing.

The effectiveness of this method depends upon having the water hot enough to destroy the smut germs which may be adhering to the outside of the grains of oats, but not so hot as to destroy the germ of the oats. Experiment has demonstrated that this may be accomplished by soaking the grain in water of the temperature indicated. The reason for using two vessels is that if one vessel were used the water would be cooled too much by the cold grain to accomplish the purpose in view, or, if it were heated hot enough to do this, it would be so hot as to destroy the vitality of much of the grain.

Poultry Notes.

A Kansas poultry grower gives expression to the following in Farm Journal:

Hens like a secluded place for nests and not too strong a light.

Set nests facing wall, with just enough room to pass between nest and wall.

In pays to sow an acre or more of small cereals for the hens. They need it for pasture in winter and they can harvest it when ripe.

Plant a patch of corn near the hennery on good soil. Plow it as often as convenient. The hens will pick up meat and wallow in the fresh earth.

In prairie countries rows of fruit or forest trees planted far enough apart to admit plowing with two horse cultivator, affords a good place for hens, and the cultivation helps the trees.

Hens require a variety of food, and by mulching the trees much "grub" may be provided for them, especially in warm climates.

The hardy, wide rangers, those clean of limb and having small combs, are the kinds wanted by the farmer.

Ground oats, boiled and mixed well with cornmeal, makes a good ration for laying hens.

Over four thousand fowls were exhibited at the New York Poultry show.

From the Mississippi station comes the report that in feeding cows for milk and butter cottonseed is more economical than cottonseed meal.

A bill appropriating $300,000 for California's exhibit at the World's fair has passed the assembly.

The wheat crop of south Australia and New Zealand is reported short and of poor quality.

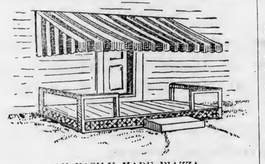
FARM AND GARDEN.

IN THE INTERESTS OF FARMERS AND THEIR COUNTRY HOMES.

How a Temporary Piazza Can Be Constructed at a Small Expenditure of Labor and Money for Use During the Long Summer Days.

There are many houses that have not the advantage of shade trees around tham during the summer, when cool places are most eagerly welcomed. A piazza is perhaps next best in its shade to a widespreading oak, ash, maple or elm. But piazzas are objected to by some, and with considerable reason, because they shut out the sunlight in winter, when it is particularly desirable. Moreover, the expense of building a permanent piazza in the ordinary way makes it an impossibility in many cases.

The illustration here reproduced from Country Gentleman shows a way to secure the advantages of one without its disadvantages, and at so trifling an ex-



AN EASILY MADE PIAZZA.

pense that it could be afforded by almost any one. A platform is made before the door of such length and width as may be desired. This can be a temporary structure, without a railing, to be taken away in the winter, or can be made to remain permanently in position if desired. A light framework is fastened to the house above this, of the same length and width, and over this is fitted striped awning cloth. The framework, which can be taken down in the winter, is easily made of light strips of wood and laths, well braced from side to side, and secured to small cleats that can be screwed to the side of the house. Such a summer piazza can be made to extend along the whole side of the house, shading both windows and doors, or arranged on a smaller scale, as shown in the illustration.

If the cloth is carefully removed from the frame each fall, and kept well secured during the summer to prevent the wind from tearing it, several seasons' wear can be had from it, though it can be replaced at a trifling cost.

The Asparagus Bed.

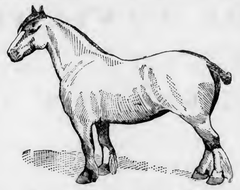
A correspondent in The Farm Journal says: While the cutting and marketing of asparagus continues every shoot, no matter how small, should be cut off. For the good of the succeeding crop, cutting should not be continued very late in the season. Time must be given to secure a vigorous growth of top before the growing season ceases, for on this depends largely the earliness and vigor of the succeeding crop.

The clean cutting destroys millions of eggs, and lessens the numbers of the second and third broods of asparagus beetles quite materially. If the small shoots be permitted to grow during this early season, they afford breeding ground for the beetles, and when the cutting ceases they are so numerous as to devour the crop as it grows up, giving the patch the appearance of having been burnt over by fire. In regard to disposing of the old tops the practices of successful growers differ. Some run the mower along the row in the fall, gather up and burn; others do this early in the spring, thinking that they afford valuable protection to the roots during the winter season.

The English Shire Horse.

Perhaps a majority of the valuable horses imported into this country go to the west and northwest, horses of all kinds, saddle, coach and draft. Also the country is beginning to look to the far west for its best trotting and turf animals.

We present this week an illustration of the Shire horse, belonging to a breed not yet thoroughly known in the United States, but wherever known very popular as being able to draw immense loads.



IMPORTED ENGLISH SHIRE MARE.

This beautiful, docile and intelligent Shire mare is owned in Colorado. The breed represents probably the strongest animals known in the annals of horseflesh. A Shire will pull alone up an incline a load that will stagger a pair of our ordinary American horses. Shire horses are of immense size and weight; slow, as must be the case where such ponderous bodies are to be moved, but steady and sure. They are to be seen in perfection on the Liverpool docks and hauling the tremendous trucks that transfer freight in London.

The many millioned Duke of Westminster, in England, has been for years the enthusiastic patron of the great Shire horse, breeding it for size and strength.

Fattening Calves.

In raising calves for veal the sooner the young animals are fatted and sufficiently matured for the purpose the more profit there will be in it. This will be accomplished by the natural process of drawing the milk from the mother sooner than by artificial feeding, and calves that are allowed to suck their dams will be preferred by the butcher. As a matter of profit to dairymen the milk will be of more value than the calf, but to a farmer who has plenty of milk and a poor market for it it may be quite different. In this case it is simply a question of the best way to fatten the calf. If nearly all the milk of the cow is required, then remove the calf as soon as he has enough and strip the cow clean at once. Where half of the milk will be sufficient the first half will be the least fattening, and it will be a question for the owner to decide whether the calf shall have the first or the last. It should, however, be remembered that there is nothing to be gained by limiting the milk ration of a calf that is being fattened for veal or in attempting to fatten him on skim milk.

THE SUPERIOR

STAMPING OUTFIT.

Contains over 100 Patterns, including Alphabet of Capitals and Small Letters. A Special Feature of this Outfit is **Copyrighted Embroidery Designing Patterns.** With these Designing Patterns any one can arrange flowers in clusters of any size or assortment to suit the fancy, or they can be so shaped as to fit any piece of material which is to be stamped. We do not offer this outfit for the large number of patterns it contains, but for their usefulness. Each being a design of best workmanship, perforated on best Government Bond, with ample working space. There are Designs for Scarf Ends. Ornamental Border and Corner Designs for Tray Cloths and Carver's Cloths. Sideboard Scarf, both Corner and Border. New Designs for Tinsel Work. Flannel Skirt, Running Embroidery, etc. Designs for Doilies, Bed Spreads, Tidies, Banners, Pillow Shams, and a Splasher Pattern 8 x 22 inches. **These Patterns are for all kinds of Embroidery and Painting.**

DESCRIPTION OF A FEW OF THE PATTERNS In addition to the designing set. These patterns are all perfect and each one complete in itself. **Splasher design,** 8x22 inches, 50c. **Splash! Splash! Owl, with Umbrella,** 6x9, for tidy. Handsome outline Design for tidy, 5x7. **Star and Anchor,** for sailor blouse. **Lawn Tennis Racket. COMPLETE SET OF CAPITAL LETTERS, Alphabet of Small Letters,** to go with the above. 1 set Large Numbers; 1 set Small ditto. **Beautiful Tinsel Design, 6 in. wide,** for Lambrequins, etc. **Narrow Braiding Pattern,** 1 1-2 in., with corner turned. Several **Flannel Skirt Patterns,** wide and narrow. **Good Night and Morning,** for pillow shams. **Stars, Crescents, Disks,** etc., of different sizes, for tinsel or art thread, etc. **Tea Pot, Creamer, Sugar Bowl,** and **Cup and Saucer,** for tray cloths, etc. **Large Spray of Roses and Buds, 6x12,** for end of table scarf or any other purpose. Large bunch of Dahlias, to match Roses in size. Beautiful spray of Poppies, 5x9. Spray of Lilies to match. **Sickel and Spray of Wheat.** Several Running Vines. Small designs for **Crazy Patchwork,** etc. Birds, Figures, Fruit, Pinks, Buttercups, Chicken, etc., etc. Large bunch of Pond Lilies. Sprays of Fuchsias, Primroses, Roses, Ox-Eye Daisies, Barberries, Clover, Grasses, Golden Rod, Sumac, etc., etc.

This is a regular Dollar Outfit, and other publishers sell it at that price. **Our price is only 50 CENTS.**

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Outfit Combines 3 Complete Brass Machines. Will thoroughly SPRAY A Orchard per day.

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Tells all about **Kalsomining** and **Paper-Hanging.** Anybody can learn how to do it. Also, how to **Polish** a **Piano** or **Organ,** or **Varnish** and **Renovate Furniture.** In short, this book will tell you **all about Painting.** It is filled with illustrations. It will save any family **ten times** its cost every year. This is the time of year when everybody begins to think about "**Fixing Up,**" and this book will help you do it.

A copy bound in **extra cloth,** with ink side-stamp, will be sent, postage prepaid, on receipt of **One Dollar.** Address

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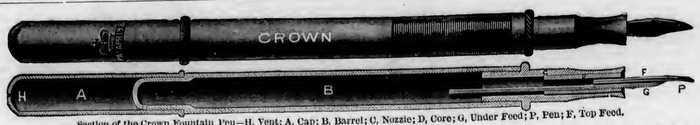

Section of the Crown Fountain Pen—H, Vent; A, Cap; B, Barrel; C, Nozzle; D, Core; G, Under Feed; F, Pen; F, Top Feed.

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78 State Street, CHICAGO.

Mention FARM AND VINEYARD.

ORCHARD AND GARDEN.

ITEMS OF INTEREST TO GARDENERS AND FRUIT GROWERS.

Nellie Lewis, One of the Latest Novelties in Pink Carnations, Which Bids Fair to Become Popular for Decorative Purposes and for Corsage Bouquets.

James Vick, to whom we are indebted for the illustration here presented of the Nellie Lewis, a pink variety of carnation, says that this novelty is a sprout from J. J. Harrison, one of the best growing varieties in cultivation. The flowers, most of which are borne on long stems, are large, full, symmetrical in form and fragrant. Their chief charm of course lies in their remarkable color, which is an unusual shade of pink.

THE NEW PINK CARNATION.

When carnations are wanted to flower during the summer and fall, plant as soon as the ground can be worked in the spring, and as the flower shoots appear tie to small stakes. They will commence to bloom, and continue until checked by heavy frosts in late autumn. If wanted for winter blooming the flower shoots should be kept pinched off until about the middle of August, by which time they will have made strong, bushy plants. Take up and pot before first of October, and keep shaded and close for a few days, when they will be ready for removal to the conservatory or window where they are to flower.

Worthy of Note.

The Kumerle or Burpee Bush lima bean is attracting deserved attention for its special merits.

Remember that syringas will thrive and do well in almost any situation or soil.

Mr. May said at a meeting of the Massachusetts Horticultural society that of tea roses without any admixture the Pride is unquestionably the best. Of hybrid teas the Duchess of Albany is the best. It is of magnificent color, clean all the way through and fragrant. If too much heat is given it becomes purple.

Orchard and Garden says: Experience teaches that in pruning young trees it is best to cut back the young shoots at time of planting to two or three buds at the bases, and when the shoots are too close to cut some of them off altogether.

At a meeting of the Western New York Horticultural society the Bar-Seckel pear, a cross of the Bartlett and Seckel, originated by Jacob Moore, of Brighton, was very highly commended. It is as large as the Bartlett, and has none of its muskiness, but a distinct flavor, melting and good.

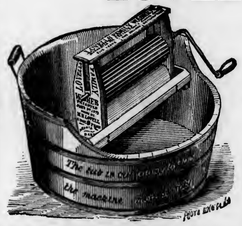
WASHER! WRINGER! BENCH!

And a Year's Subscription to Farm and Vineyard,

ALL FOR FIVE DOLLARS.

Where the territory is not occupied by an agent we will send this complete outfit for $5.00 to any person who will undertake to introduce the FARM AND VINEYARD in their neighborhood.

LOVELL FAMILY WASHER.



We will guarantee the "Lovell" Washer to do better work and do it easier and in less time than any other machine in the world. Warranted five years, and if it don't wash clothes clean, without rubbing, we will refund the money.

We have made special arrangements by which we can supply a limited number of these Washers for $2.00, including a year's subscription to Farm and Vineyard, or we will give the Washer free to anyone sending in a club of ten subscribers at our regular clubbing rates, 25 cents each, but we cannot pay freightage.

We will sell this Wringer for **$3.00**, *including a year's subscription to the Farm and Vineyard.*

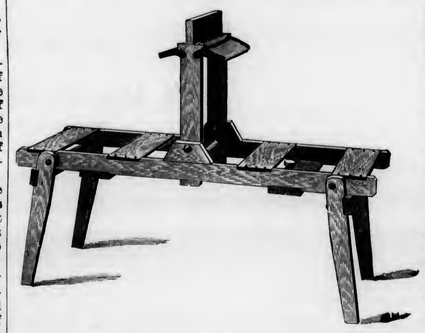
Celebrated Keystone Wringer, No. 10.

We desire to call your attention to this new Wringer. The frame is made of the best Hard Maple, and the Rolls are of solid White Rubber, fastened in the most secure manner to the shafts. The pressure is secured by the use of the Steel Spiral Spring, especial care being taken to procure the best Spring Steel for this purpose. The side pieces are bolted together in such a manner as to prevent the possibility of spreading or splitting.

The Clamps used in the "No. 6," are made entirely of Malleable Iron, and are of such form and construction as will secure the Wringer to the tub most effectually, and are attached in such a manner as to make them adjustable to any sized tub, round or square.

The essential features of this Wringer are strength, durability and easy working. It has been subjected to the most severe tests, and is found to possess the great merit of being a "dry Wringer," and remarkably easy to operate. We do not hesitate to recommend it as a machine that will give entire satisfaction.

FOLDING DOUBLE WASH BENCH.



The engraving represents the most complete artices of the kind ever offered to the public. Made of all hard wood, nicely finished. The upright piece is so constructed that any kind of a Wringer can be fastened to it. By pressing lightly on a button with the left hand the standards bearing the Wringer may be easily let down with the right to a level with the top of the bench. The legs may then be folded under, thus forming a snug and compact package, occupying but little space when not in use, and being in the most desirable shape for transportation. It is provided with a double water-board, so that the Wringer may be used from either side. This is an article that fills a long-felt want and will be greatly appreciated by all housekeepers. The price is but a small item when the real convenience of such an article taken into consideration. Why continue to use a rickety chair or clumsy box, when this substantial and convenient bench is at your command for a mere nominal price. Here your Wringer is always out of the way and just where you want to use it, Every woman knows that nothing injures her tub so much as the straining of the Wringer attached to it. One of these Benches will last twenty years. Don't you think you would save its cost a good many times over in that time? Our agents will find it a most desirable article to handle in connection with the Washers and Wringers.

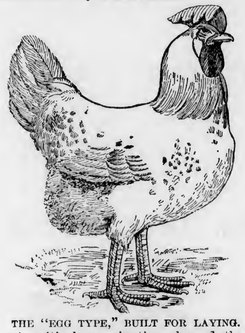
We offer this Bench for 8 Subscribers to Farm and Vineyard at our regular clubbing rates 25 cents each; or will sell for $1.50, including a year's subscription to this paper; or will sell the Washer, Wringer and Bench, and the Farm and Vineyard a year for $5.00.

Address FARM & VINEYARD, Erie, Pa.

POULTRY THAT PAYS.

The Egg Type of Hens—Egg Food and Egg Production.

Rural New Yorker recently gave an account of how 100 pullets, hatched at one time and raised together, were placed in one house, and when one laid she was taken out. This was continued until there were fifty in each house.



THE "EGG TYPE," BUILT FOR LAYING.

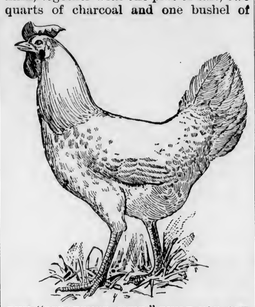
A critical examination showed that nearly all that were laying were of the No. 1 type—see first cut—while those that were still unproductive resembled in shape and appearance No. 2—see second cut—which is a longer legged, ungainly, slim bodied hen, that spends her time looking for something to get scared at. A record of the two flocks showed a difference of 20 per cent. in the number of eggs laid. No. 1 kept laying until nearly denuded of feathers, and finished moulting and began laying quicker than No. 2. A short legged, deep bodied, full breasted, wedge shaped, large combed hen, with a quiet disposition, has capacity to consume large quantities of food and return eggs instead of noise and flutter. The breeder is confident that this flock, grown from selected mothers, will average 200 eggs each per annum. The 20 per cent. advance obtained makes a difference of $1 each in the two flocks. There are "families" of butter cows among the Jerseys, and some day there will be "egg hens" among the already famous Leghorns. One of these improved hens placed in the hands of one ignorant of feeding principles would be compelled to descend to a level with the rest of his flock from lack of a well balanced ration.

The egg shell is largely carbonate and phosphate of lime, while the edible portion is composed of 74.6 per cent. of water, 12.5 per cent. of albuminoids, 10 per cent. of fat and 9 per cent. of ash. This is the average of eighty eggs analyzed at the Geneva experiment station. Milk and meat are largely albumen. The hen cannot elaborate lime and albumen from fat or starchy food, which is chiefly valuable for the warmth it furnishes; hence corn is a poor food, and milk, meat and shell are very essential for egg production.

Eggs differ in quality and appearance in accordance with the nature of the food. Cotton seed meal in excess gives an egg a week old taste that is disgusting. Onions give a rank taste. Too much clover hay and a bad colored lot of sea shells spoil the beautiful white of the egg shells.

The authority quoted furnishes the following tables giving the ration that has produced the best result for egg production for 600 hens:

First—Morning, by weight, all they can eat of the following mixture: One-half bran, one-fourth corn and one-fourth oats, mixed with hot water or milk, together with one pint of salt, two quarts of charcoal and one bushel of



THE "SCRATCHER TYPE," BUILT FOR GETTING SCARED.

clover hay cut fine. If there be no milk add sixteen pounds of chopped meat and one bushel of beets cut fine.

Second—Noon, whole grain by measure. Two parts oats, one buckwheat and one wheat; give one quart to fifty hens in chaff.

Third—Night, the same as second, all they will eat.

Fourth—Drink, milk or pure water.

For chickens, a cake made of sour milk, salt and soda made thick with sifted feed and baked, also cracked wheat.

Here and There.

There were 182 entries of Indian games exhibited at the late New York Poultry show.

And now we are told that Mr. George W. Childs has a $30,000 stable at Wootten.

An enterprising Iowa farmer who operates a big farm has called in the telephone as a means of direct communication with the various departments thereof.

A law protecting song birds has been passed in Oregon.

The Apple Curculio.

Mr. Gillette, in a bulletin from the Iowa Experiment station, says: Where orchards are regularly treated with the arsenites for the destruction of the codlin moth, it is quite probable that this insect will also be kept in check, otherwise jarring the trees and collecting the beetles on a large sheet, or gathering and destroying infested fruit, will be the most practical remedies. If hog or sheep are allowed to run in the orchard they will pick up all windfalls and do much to keep this insect, and the codlin moth as well, in check.

Tests of Varieties of Wheat.

The annual report of the Pennsylvania State college agricultural experiment station contains the following summary of the results of its tests of varieties of wheat during the season of 1889:

Judging from this and previous seasons' experience and from general characteristics as well as yield, the following varieties may be ranked in this locality, on a retentive lime-magnesia clay soil with a compact subsoil, in the following order: Dietz's Longberry Red, followed by the Fulcaster, Fultz or German Emperor; these by McGhee's White and Raub's Black Prolific, then Sibley's New Golden, and lastly the Extra Early Oakley variety. Currell's Prolific, Improved Rice and the Mealy were only grown this season. They did well, except in the yield of the Improved Rice. They are not ranked with the others because of the lack of sufficient data to place them with the older and more thoroughly tested varieties in this locality and under our conditions of soil and climate.

Seeds! Seeds! Seeds!

So many of our subscribers have requested us to offer **Vegetable and Flower Seeds as Premiums** with the paper, that we have decided to make the following very liberal offer. We will send any of the following collections by mail, postpaid, and a year's subscription to the paper for 50 cents, or we will send either collection, postage paid, to any person getting up a club of 5 subscribers at 25 cents each.

Collection No. 1.

15 Packets Choice Flower Seeds, as follows: 1 packet each Choice Mixed Asters, Balsam, Balloon Vine, Calendula (Prince of Orange) Candy Tuft, Summer Chrysanthemum, Clarkea, Convolvulas or Morning Glory, (mixed colors), Nigella, (love in a mist), Marigold, (choice mixed), Mignonette, Climbing Nastartium, Sweet Pea, Striped Petunia, and Finest Mixed Pansies.

Collection No. 2.

Contains 12 Packets Choicest Flower Seeds, as follows: 1 packet each Choice Mixed Asters, Balsam or Lady Slipper, Cypress Vine, Choice German Pansies, Mammoth Verbena, Mignonette, Phlox, Drummondi, Finest Bedding Petunia, Double Zinnia, Double Portulaca, Moon Flower, and Finest Cockscomb.

Collection No. 3.

Contains 8 Packets Vegetable and 8 Packets Flower Seeds. 1 packet each Early Beet, Early Summer Cabbage, Early Spine Cucumber, Lettuce, French Breakfast Radish, Vegetable Oyster, Spinach and Dwarf Champion Tomato.

FLOWER SEED.—Choice Mixed Aster, Candy Tuft, Mignonette, Sweet Pea, Pansy, Striped Petuna, Mammoth Verbena, and Double Zinnia.

Collection No. 4.

Contains 14 Packets Choice Vegetable Seed.—1 packet each Early Beet, Cabbage, Intermediate Carrot, Golden Heart Celery, Premium Cabbage, Lettuce, Long Green Cucumber, French Breakfast Radish, Early Hackensack Mush Melon, Hollow Crown Parsnip, Dwarf Champion Tomato, Vegetable Oyster, Spinach, White Globe Turnip, and Golden Bush Squash.

Collection No. 5.

Contains 12 Packets Choice Vegetable Seed.—1 packet each Blood Beet, Marblehead Mammoth Cabbage, Half Long Carrot, White Plume Celery, Improved White Spine Cucumber, Egg Plant, Boston Market Lettuce, Surprise Melon, Yellow Danvers Onion, Large Bell Pepper, Scarlet Olive Shaped Radish, and Cardinal Tomato.

Collection No. 6.

Contains 12 Packets Vegetable Seed.—1 packet each Black Wax and Golden Wax Beans, 1 packet each Early and Late Beet, 1 packet each Early Jersey Wakefield, and large late Flat Dutch Cabbage, 2 packets Carrots, 1 early and 1 late, 1 packet each Yellow Danvers and Silver Skin Onions, 1 packet Summer Squash, and 1 packet Early Tomato.

When ordering collection, order by number.

Address

Farm and Vineyard,

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NEW MUSIC BOOK.

On the first day of May we shall place on the market Professor CHARLES F. ESCHER'S NEW BOOK, entitled

OUR HEART'S DELIGHT; or, Sweet Melodies of the Past and Present.

being a compilation of vocal and instrumental music, adapted to piano or organ. The work will contain the best and most popular selections of the renowned authors of this and foreign countries. **32 full-page lithograph portraits of famous vocalists, instrumentalists and composers.** Nearly 450 pages. **Size 10 x 12 inches.** Durably bound in cloth, stamped with appropriate design. This work is especially intended for musicians who desire **a variety of choice pieces.** Contains plenty for the beginner, and a good supply for the inexperienced. **Over 1000 advance orders already received. AGENTS WANTED in every town to to begin May first.** We guarantee satisfaction, and refer you to Dun's or Bradstreet's agencies for our responsibility. **Goods on 30 days' credit.** For special terms, etc., address

H. J. SMITH & CO., Publishers, 231-236 South Eighth St., Philadelphia, Pa.

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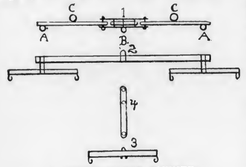
FARM AND GARDEN.

INFORMATION OF A NATURE SURE TO INTEREST RURALISTS.

A Simple Three Horse Arrangement That Precludes All Chance for Either Animal to Get Any Advantage Described with the Aid of Illustrations.

The three horse evener here illustrated was contrived and has been used for two seasons by a Connecticut farmer, who writes about it as follows in The Rural New Yorker:

For the neck yoke take a single piece of tough timber of the desired size and length and cut it into three pieces, making a joint six inches on each side of the



A THREE HORSE EVENER.

middle by bolting on two strips of iron, as shown in cut (Fig. 1). The pole chain rings A are the same distance from the center ring B. The pole rings C C are one-third of the distance from A to B. I equalize the draught by a bar of iron ½ by 2 inches, containing three holes. The end holes are 7½ inches apart and the other hole is 2½ inches from one end (see Fig. 4). The bar stands vertically, with the edge to the front, in the center of the piece which fills the place of the pole and back of the cross bar to the shafts, or poles, and is held by a bolt through the middle hole. A long evener attached to the top or short end of the bar takes the draught of the outside horses, while a whiffletree at the lower end, under the cross bar, takes that of the middle horse. There is no possible chance for either horse to get any advantage. The whole thing is shown in the cut. It is simple, light and brings the team near the load.

A Woman's Views on Poultry.

An Ohio woman writing in the New York World on poultry expressed the following views:

Where one is keeping poultry with an eye singly to profit, I consider that it is imperative that only year old hens and pullets be kept, the older hens being cleared off every year. These old hens are by no means worthless, either for culinary purposes at home or to market. Housekeepers are glad to get them for boiling, for fricasse and for soups.

Where eggs only are required, the very best plan, in my experience, has been to keep pullets only, but when eggs and chickens are both required my plan is to keep half and half of year old hens and pullets of various ages from February to May. It occasionally happens that it pays to keep a really good hen for as many as three seasons, as she will lay the eggs to supply you with thriving young ones as well as fresh eggs for the table during the late spring and summer.

There appears no reason why, if women lend their time to the care of poultry at all, they should not keep that which is pure bred. I have found many advantages and no disadvantages in keeping pure birds. I like to see shapely and beautiful plumaged birds on my grounds, to begin with. Then, instead of having on hand a lot of cockerels to kill off for home consumption, I can sell them at a fair price to those who desire to infuse into their flocks new blood. The surplus hens and pullets are always in demand at good prices. If you are anxious to advertise your flocks the pure bred birds make a fine show at the state and county fairs. In regard to cross breeds I will say here that first-cross birds are often very valuable egg producers, but further breeding from the crossed birds has not been with me successful, as the best qualities of the two breeds originally crossed deteriorate and in time disappear. There are, however, exceptions to this, as to most other rules.

Two Crops in the Orchard.

Many farmers endeavor to secure two crops from an orchard—fruit and grass—the result being that the grass robs the trees, while the trees in turn shade the grass and draw upon the land for their share. Some fruit trees, such as the peach, will perish in a single year if grass covers the ground of the orchard, and though such is not the case with apples and pears, yet the lesson from the condition of the peach tree under such conditions teaches that grass is at least a drawback. It may not be proper to force the young trees too rapidly at first, and it is true that an occasional grass crop plowed in has given beneficial results, but to keep an orchard as a pasture is to occupy the ground with unprofitable fruit trees. An orchard should be kept neatly trimmed, well fertilized or manured and cultivated thoroughly at least once a year, says the Philadelphia Record.

Regrafting Old Apple Trees

So long as a tree has a sound trunk it is worth taking the best of care of it, says American Cultivator, and this includes regrafting if the variety is unproductive or otherwise undesirable. On most old trees some free growing variety succeeds best, as it is less likely to run to wood than it is on its own stock. The check caused by failure of the old stock to supply enough sap for the graft disposes it to fruit bearing. Thus with apples the Northern Spy graft on any old tree will bear in two or three years, while a young tree of this variety takes a very long time to come into bearing.

What Others Say.

A man of family who has land and will not grow some grape vines should be deprived of citizenship, says Popular Gardening.

Rural New Yorker advises trying a few hills of the Fordhook squash, as concurrent testimony ranks it as one of the best all year round varieties in cultivation.

Plowing and liming the poultry runs purifies the soil. It probably needs it.

The young broods will do better if placed on new ground, away from the old runs.

The sheep industry in the United States is rapidly changing from a wool to a mutton basis. This will give it a permanency.

Bee Notes.

An absconding swarm, as the name suggests, is one that has separated from the cluster and is going to its new home before the beekeeper has had an opportunity of hiving it. To capture an absconding swarm beekeepers practice throwing water among them in a fine spray by means of a hand pump.

A hybrid bee is a cross between two different races. All the bees except the drones from an Italian queen mated to a black drone will be hybrid. The drones will be pure if the queen is.

Worker eggs are those that develop the workers. The workers are hatched from impregnated eggs and are laid in small horizontal cells. In size the workers are smaller than the queens or drones, and upon them devolves all the work of the colony.

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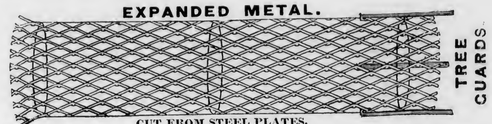

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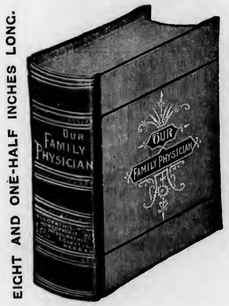

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THIRD. In its directions for treatment it is not confined to the practice used by any one class of physicians; but it gives, separately, and for each disease, the methods used by each of the different "schools" of medicine; and in all cases the prescriptions are made by the most eminent men in their respective modes of practice. This makes the work especially suited to the needs of every family, no matter what "school" of medicine they prefer.

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NUT TREES ON THE LAWN.

An Attractive Combination of the Useful and the Beautiful.

The combination of the useful with the ornamental in lawn making is recommended by Orchard and Garden in proposing the use of nut trees on the lawn. In spite of some objections that might be urged, it pronounces the adoption of these trees worthy of consideration, and has seen large lawns where they could be safely planted. They should be planted somewhat remote from the house and at some distance from the drive and the walks. The trunks should be trimmed sufficiently high to prevent children from climbing them. As the nuts always fall when ripe, they should be gathered from the ground, with one exception, when it will be necessary to gather them from the tree. The exception is when the nuts are used for making pickles and catsup, when they should be gathered sufficiently immature to allow a needle to penetrate them easily. Green or unripe butternuts have long been used for making pickles, which many much prefer to pickled cucumbers. The famous walnut catsup is made from immature Maderia nuts, sometimes called English walnuts, though the tree is not a native of England, but of Persia. The butternut is Juglans cinerea; the black walnut is J. nigra, and the Maderia nut is J. regia. J. regia preparturiens is a spreading, dwarf variety of the last, and bears fruit when quite small. It is particularly adapted for a small place. In regard to the hardiness of J. regia, the authority quoted knows of trees in Westchester county, N. Y., upward of sixty years old that ripen their crops quite uniformly.

An Interesting Fern.

The fine evergreen plant here illustrated is a native of New South Wales and known as the Australian bird's nest fern, from the remarkably peculiar manner of its growth. The fronds take an upright direction at the start, so as to leave the crown elevated and exposed, thus forming a large funnel shaped hollow center.

AUSTRALIAN BIRD'S NEST FERN.

This plant is wonderfully well adapted for vases, for which it makes a splendid object. Although requiring stove heat to grow and develop in during the most of the year, it will stand very well outdoors in the summer time if not exposed to the full sun. Great care should be taken to keep away slugs and wood lice, which are exceedingly fond of the young fronds; the best way to prevent these pests getting at the plants is by placing the latter over a pan of water on three inverted pots so as to prevent the bottom of the pot touching the water, but at the same time leaving a liquid barrier of two inches all round to keep off all intruders. The soil must be made sandy, and should consist of light, turfy loam and peat, with some leaf mold and good, sharp sand. The roots require good and careful drainage.

A New Tea Scented Rose.

Of all the recently introduced tea scented roses, The English Garden pronounces the Ethel Brownlow the best. It is of splendid habit and also supplies a color long wanted. Its color may be described as being between Catherine Mermet and Countesse de Nadaillac. It is a grand rose to stand, both on and off the plant, and is also very delicately scented.

Helpful Hints.

The double varieties of the Deutzias are valuable lawn plants.

The variegated ground ivy furnishes a very pretty and hardy herbaceous plant.

Old strawberry plants seldom produce as large berries as do young ones.

Many coniferous plants are increased by cuttings on a large scale, especially retinosporas, arbor vitaes and the like.

Cuttings of plants which root with difficulty are sometimes grafted with good effect upon those which root easily.

Leaf mold is a natural fertilizer for all trees and shrubs and wood flowers, or any of the plants that like a shaded place. It is also very useful as an addition to potting soil.

Building a Grapery.

The following instructions in regard to building cold graperies appear in Popular Gardening: The form of the house is of little consequence, so long as it is built in a protected place, above ground of course, and in full exposure to the sunlight. Thorough drainage is indispensable. There is no objection to having a number of houses side by side. For cold graperies smaller houses would be preferable to larger ones. The vines are planted inside, one under each rafter, and trained along the rafter. With rafters three feet apart, the span house 22x100 would hold about sixty-six vines. The following varieties of exotic grapes are best for cold grapery, viz.: Black Hamburg, Muscat Hamburg, Royal Muscadine, Chasselas Musque, Golden Chasselas, Grizzly Frontignair. We could not recommend to plant any of the American sorts.

Horticultural Items.

The cherry thrives quite well on either high or low lands and on sandy or loamy soil. An eastern or northern slope is preferable, as trees do not suffer so much from droughts or heat of sun on such locations.

The Farm Journal's way of watering a tree, shrub or vine is this: Punch holes with a crowbar all around the trees in a circle as wide as the branches spread and pour the said holes full of water. To simply pour a few bucketfuls of water around the stem of the tree is to do more harm than good.

The New Jersey State Agricultural society, balloting for the best three grapes for general use, one of each color, decided in favor of the Brighton, red; Worden, black, and Niagara, white.

The only effectual check for black knot seems to be to cut away and burn the branches infected, and the only actual remedy is to destroy the tree, root and branch.

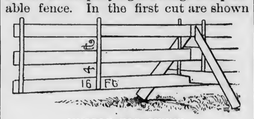
Popular Gardening suggests that Paris green or London purple may be used with the Bordeaux mixture and thus gain a combination useful both for insects and fungus diseases.

Messrs. Le Moine, of Nancy, France, have sent out this season a sweet scented begonia. The flowers are described as rose colored and having a rose scent.

A PORTABLE FENCE.

A Fence That Can Be Used for Hurdling Swine, Dividing Pasture Lots, Etc.

We are indebted to Country Gentleman for the accompanying drawings of a portable fence. In the first cut are shown

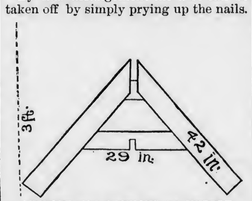


HURDLE FOR SWINE.

two sections coupled; in the second cut is illustrated a support for the same. Country Gentleman says:

This fence is the most durable and perfect that I have ever seen. Forty rods of it can be drawn at one load and put up by two men in an hour. In making the panels be sure and have the 2 by 2 uprights, to which the boards are attached at the ends, on different sides of the boards as shown in the cut. The 2 by 2 should extend one foot above the top board, so that in case the fence is used to inclose cattle or horses a wire can be run on top, and secured by driving an eightpenny wire nail about half its length in the top and turning it down over the wire.

By this arrangement the wire can be taken off by simply prying up the nails.



SUPPORT FOR SECTIONS OF HURDLE.

This fence is in constant use with us in fencing or dividing pasture lots, and in securing stacks from the stock.

The Feeding Value of Grains.

Japanese buckwheat differs in no way as regards feeding qualities from our common buckwheat, and as buckwheat is an excellent grain for sheep when mixed with oats or rye, there can be no harm in using the Japanese variety for this purpose. As compared with corn and bran, it is of the least value for feeding, being deficient in fat, which is the most valuable part of the food. The feeding value per 100 pounds of buckwheat has been estimated at seventy-seven cents; wheat bran $1.01, and corn $1.11. Buckwheat, according to this estimate, is the least valuable of all the grains for feeding, and a bushel of it is worth only thirty-five cents for this purpose. It is probable that it could be sold for more than this, and thus could be better disposed of in this way.

But, writes Henry Stewart to Rural New Yorker, it should be said that in practice these theoretical feeding values are considerably modified by circumstances, especially by the mixture of foods, by which they become more digestible. In feeding buckwheat and corn ground together to sows with young pigs I obtained more growth of the young pigs than with as much corn meal alone. And in feeding corn, rye and buckwheat, whole, mixed in equal parts, to sheep, the ewes have done better and the lambs have grown better than with corn only. Thus I consider buckwheat a cheap feed at the comparative valuation above given. This is due to its effect in increasing the flow of milk, as well as to the better digestion of the mixed food. The nutritive ratio of the mixed grain is 1 to 6.3, which is a desirable one.

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Mistakes in Pruning Trees.

Nothing in the shape of ornamental trees has a more awkward appearance than one of long legged form trimmed up with a bare stem as high as a man's head or a housetop, especially if it is an evergreen. Standing alone, they should be perfect specimens feathered all the way down to the ground, or if the trees are old, large and stately in growth, possessing the magnificence of broad spreading oaks or magnificent elms, the foliage and the wide branches which sustain it should approach so near the ground that the huge stem would be barely visible.—Country Gentleman.

When to Examine Orchards.

When the leaves are off is a good time to look through orchards, see what pruning is needed, and examine closely for eggs of caterpillars, which may be seen on the ends of the branches. These may be either cut off and burned, or, if this would disfigure the tree, touch the eggs with a rag dipped in any kind of oil. The eggs of insects do not differ from those of hens in requiring to be kept open to the air. If the pores of the shells are closed the egg never hatches, says American Cultivator.

VERMIN ON SHEEP.

Small but Wicked Foes of the Sheep Raiser.

Owing to their thick, warm fleeces, sheep are more subject to vermin than other animals. The three worst pests that trouble them are the sheep tick, sheep louse and scab mite. Illustrations of all three are given below. By far the worst is the scab mite, which is something similar to the itch mite that attacks the hands of dirty people. Crozier says that if a lock of wool from a scabby sheep is laid upon a sheet of white paper there will be seen particles which look like moving dust. These are scab mites. They are terrible in their ravages. They burrow into the animal's skin under the wool and set up a running sore. The sore becomes covered with a scab, and the wool peels off. The itching is intolerable. The suffering creature rubs it-

Under side. Upper side.
SHEEP SCAB MITES.

self against fences and trees in its efforts for relief, and it leaves wool and mites scattered along its way, and the next sheep that comes past there will get the infection.

When wool from a scabby sheep is sold and passes into the hands of the wool sorters, the mite attacks their hands and produces wool sorters' itch. It is to be dreaded more than any other scourge of sheep breeders, except perhaps dogs, and for this reason must be guarded against vigilantly. The moment a sheep in a flock is seen to be losing its wool and rubbing itself against posts and buildings, examine it at once, to see if there is not a scab where the rubbing and bare spots are. If so, separate it from the rest of the flock, and give it a dip into a mixture composed of four ounces of tobacco stems, or coarse tobacco, and one of sulphur, stirred and steeped thoroughly in a gallon of boiling water. This should be the proportion, and the quantity used should be sufficient to cover the sheep all over except its head. The liquid should be hot when the animal is dipped, not less than 129 degs. Rub the scab entirely off with a corn cob or rough cloth. In two weeks repeat the dip and the animal will be cured.

The loss from the scab mites to sheep raisers cannot be calculated. Sometimes whole flocks are destroyed. As a precautionary measure, many extensive sheep farmers practice dipping their flocks twice a year in a sulphur and tobacco decoction, once at shearing time and again in the fall.

Sheep Ticks and Lice.

The same decoction of sulphur and tobacco will destroy two other troublesome pests of sheep, the tick and louse. When the sheep are shorn in spring, the ticks and lice leave them and crawl off upon the lambs, which they torment till the helpless creatures sometimes die.

SHEEP TICKS (natural and enlarged size). SHEEP LOUSE.

The sheep tick is about the size and color of the insect that infests the beds of slovenly human creatures. It sucks sheeps' blood just as the other unnamed, nasty little beast sucks the blood of humans.

Points of Interest.

When eggs are cheap breed your chickens and set your hens. When eggs are dear sell them and turn all your hen force into layers as far as possible. Give egg producing food and let your non-sitting breeds have full action.

Complaint is made that feeding ensilage causes loss of the teeth of animals. This may be remedied by feeding some hard, dry food daily along with the ensilage. Some hay to chew on is good, also occasionally oat grains are desirable.

In the Rhode Island Agricultural school and in the Michigan Agricultural college beekeeping is taught as one of the regular branches. So it ought to be in all schools of farming.

Be extremely careful in breeding the fowls you mean to keep for stock. See that the birds you mate are free from blemishes, in the prime of chicken life and in perfect health. Then after the eggs are laid take the utmost care of them, selecting only the largest and finest for hatching, unless you want to breed dwarfs; in that case choose the smallest ones. If this care were exercised there would not be so much complaint of defective hatching. To hatch well eggs must be handled with great care, and not shaken or moved violently.

Farm horses well taken care of have a working life of twelve to eighteen years. Street car horses, on the contrary, live only four or five years.

Never use a long, gangling, overgrown rooster for breeding, says a poultry writer. It is nearly impossible to fill him up, and he never makes a good table fowl.

A well stocked fish pond ought to be a part of every farmer's resources, and the brooks and streams on his place ought to be alive with fish. The fish commission of New York furnishes fish stock to those who make application, and every state in the Union might have similar arrangements.

Put tarred felt on the outside of a chicken house and whitewash on the inside.

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Farm & Vineyard
And American Gardener's Assistant.
VOL. 5. NO. 4. ERIE, PA., AUGUST, 1891. FIFTY CENTS A YEAR.

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Selling Off.

BY N. J. SHEPPARD, Miller Co., Mo.

For the FARM AND VINEYARD.

The amount of feed that the farm can be made to furnish should largely determine the number of stock that should be kept during the winter. While it is an item to feed out nearly, or quite all of the farm products to good stock on the farm, and market in this way, it is only in exceptional cases that it will pay to purchase any considerable amount of feed. Some bran, middlings and oil meal can be purchased to be used in connection with the material grown on the farm, but in the main the farm should feed the stock, and feed in such a way as to secure a steady gain from birth to maturity. It does not pay to winter stock without maintaining a good growth, and for this reason largely the amount of feed should determine the number of stock to keep. A larger number can be kept of different kinds of stock, than when a specialty is made of only one or two. With a variety of products and different kinds of stock, the different products can be used to a better advantage, and there will be less waste, and the stock can be made ready for market at a lower cost. But to attempt to winter more stock than the products of the farm will keep well, will nearly always result in loss.

One advantage in determining easily what stock is to be sold and what to be wintered over, is that what is to be sold can be fattened and marketed to a better advantage than later. There is a loss of stock that can only be fattened profitably during the summer and early fall, when there is plenty of grass, and they should always be pushed now and be marketed whenever they are in a good condition.

All stock that have become so old as to be past what may be termed the profitable point, so far as growth or profitable breeding is considered, should be fattened and marketed. But on many farms this is not all; there will be more or less of the younger growing stock that it will often be an advantage to market, rather than to winter over. In many localities it is easier to grow plenty of grass for pasturage during the summer, than to secure a sufficient supply of feed to keep in a good condition during the winter, hence it is best to cull out, not only the older stock, but also among the younger, keeping the most promising and marketing the rest, or at least a sufficient number, so that the feed the farm can furnish, with what oil meal and bran it will pay to purchase to feed with it, they can be in a good, thrifty condition.

THE TRIFOLIATE ORANGE.

The Marlboro Raspberry.

I have read a great many conflicting reports concerning the quality and productiveness of the Marlboro Raspberry. Some writers claim it to be one of the very best; others again say it is not worth growing. I planted Marlboro with Cuthbert and several other kinds, four years ago, on light, sandy soil, heavily manured annually; but until last year Marlboro failed to produce a crop, while Cuthbert on the same soil has borne a heavy crop annually. But after picking an extra heavy crop of such delicious Marlboro berries as I picked last year, I do not wonder at the praise lavished on this variety by some growers. Now what is the reason? Does the Marlboro require a different soil than the Cuthbert? Was the wet cold spring of 1890, that was ruining my egg plants, lima beans, early corn, etc., just what the Marlboro required? If so! that may account for the many conflicting reports, although I do not ever remember reading or hearing of its especial requirements as to soil and position. If I had, it would have been worth several years subscription to more than one Horticultural paper. Several of my neighbors who grow the Marlboro, reported a good crop last year, where it was previously a failure. It may be interesting to hear what your other readers have to say on the subject.

A GROWER.

The Trifoliate Orange.

The subject of our illustration is said to be the hardiest variety of the orange family. Mr. Wm. Parry, Pomana Nurseries, Parry, N. J., to whom we are indebted for the following description, claims it will stand our northern climate with little or no protection. It is a dwarf, of a low, symmetrical growth, with beautiful trifoliate, glossy green leaves, and abundance of large, white, sweet-scented blossoms, larger and finer than any other variety of orange blossoms, and borne almost continually. The fruit is small, bright orange-red in color, having a peculiar flavor, of no value for eating. The fine appearance of the plant, with its constant habit of blooming, and showy fruit, combine to make a plant of peculiar value and beauty. It is a conspicuous and attractive object in any shrubbery or pleasure ground, pot or tub, and is best suited for open ground culture, as it is deciduous and drops its leaves in the fall, and cannot be induced to make much growth in winter, even in a greenhouse, though it will not drop its leaves if kept from frost. It blooms very profusely in spring and early summer, but after the fruit begins to form blossoms are not plentiful. Our cut represents a young tree, about four feet high, as it appears when in bloom and when in fruit, but the flowers and fruit do not appear *together* to the extent shown. The fragrance produced by a tree in bloom can be appreciated only by those who are familiar with the delicious perfume of the orange blossom.

The beautiful pictures, Christ before Pilate and Christ on Calvary, are still offered. Either picture and a year's subscription to this paper, for only 50 cents.

INV. '60

HORTICULTURE.

The FARM AND VINEYARD is regarded as the official organ of the Chautauqua Horticultural Society.

PRACTICAL GRAPE PAPERS No. 1.

Locating the Vineyard, Soil, Situation, Etc.

By H. H. T.

For the FARM AND VINEYARD.

LOOK BEFORE YOU LEAP.

Before deciding on a spot for a vineyard, too much caution cannot be used in selecting the locality. The home gardener, who plants a few vines to supply his family with this luscious fruit, must take the circumstances as he finds them, and try to make the most of opportunities ready-made for him. But the prospective grape grower, for profit only, cannot safely do so.

LOCATING THE VINEYARD.

This is a matter of vital importance. A vineyard once planted, and planted well, will last a lifetime, and mistakes in the location of the vineyard, are often the sole cause of failure, even when all other conditions are favorable. If you are already the owner of a farm, it only remains for you to choose the best land you have for the purpose. But if you are about to purchase land for the sole purpose of growing grapes for market, the case is different; the old idea that grapes do best on very light lands, is mainly due to the fact that such lands are naturally dry. While a heavy clay may not be the best soil for the grape, in my estimation it is preferable to a very light soil, especially if underdrained, for the one thing that grapes cannot abide is stagnant water. Land thoroughly drained to the depth of three feet, warms more quickly in the spring, and makes a difference of five to ten degrees in temperature at the time when the vine most needs warmth.

CHOICE OF SOIL.

Some growers recommend a gravely soil, but if possible choose a rather stiff loam, neither sandy or clayey, as deep as can be found, the deeper the better, but not less than twelve inches. If the subsoil is sufficiently porous to let the water pass through freely, you have struck the right spot. The best grapes it was ever my pleasure to behold were grown on just such a soil At a meeting of grape growers held at Ripley, N. Y., about two years ago, a resident grape grower, when asked to name the best soil for grapes, replied:

"If you have a piece of land that will grow nothing else, plant it to grapes." Do not be deceived by any such talk. If the soil is not naturally good, it cannot be made so without the expenditure of considerable time and money.

Again we hear a great deal about exhausted lands, and many a purchaser has bought land, laboring under the impression that he was purchasing first class land run down, when, in my estimation, most of the lands said to be run down never were good.

I can call to mind at the present moment, two vineyards, that in spite of having plenty of manure and the best of cultivation, were total failures. One of these were planted on muck, underlaid with clay; the other on gravel high and dry; *gravel*, the owner remarked, clear through to China. On the muck the grapes invariably refused to ripen, and on a hot dry gravel, nine seasons out of ten, they refused to set their fruit.

Again there is a great diversity of opinion as to the best location for the vineyard. The best lands in Chautauqua county, N. Y., are said to extend from the lake beach about four miles south. The soil nearest the lake is clay, the next gravel, and still farther south a rocky shale, and with good management all these soils will produce good grapes. The grapes grown on the gravel are said to excel in size of cluster, and handsome appearance, while those grown on the rocky shale produce the grapes with the toughest skin and the most sugary pulp. Many acres of vines are now being planted farther south on the hill, and some grapes of superior quality were grown last year on land which a few years ago would have been considered worthless for grape culture.

According to the report of the President of the Viticultural Commission, the soil which produces the best quality of grapes in California is either a red gravel intermixed with clay, or white volcanic ash, which contains more or less the properties of iron. This kind of soil is confined almost exclusively to the hill and mountain lands, hence the greater number of vineyards in California are located on the higher lands. The valley lands are said to produce a greater growth of vine and larger yield of berries, but at the expense of quality.

Of one thing I am certain, the grapes grown on the hills south of Lake Erie will never suffer from the depredations of the rose bugs to the same extent as the vineyards nearer the lake. Some vines in the neighborhood of Erie this present season had their crop of fruit completely destroyed by this terrible pest. It is said by some that any land open to the lake will grow and ripen good grapes; this may be in a great measure a guide in selecting land for this purpose, providing you have the right kind of soil and the drainage is perfect, as land which gives an unobstructed passage to the lake breezes will be far less likely to suffer from the late spring frosts.

Whenever choice can be made in the situation or aspect of the ground, choose a level spot if possible, but if there be any slope, let it be to the south. One of the advantages of level land is the ease with which it can be worked. Again grapes on level land are less liable to suffer from severe freezing. Look at the vineyards in your neighborhood and you will find the best vineyards on level, or nearly level land. Again, if you find a vineyard full of knolls that was planted to grapes partly because it was difficult to plow, there you will find vines of all shapes and sizes, good and bad, and the grower going through his vineyard every spring, planting new vines to take the place of those killed by the winter frosts.

This paper would not be complete without a word of warning to the young beginner. Don't go into the business of grape growing on a larger scale than experience will warrant. Profits are easily figured out on paper, and often allure the novice into a feeling of false security. Debts are contracted and the profits that are expected to pay these debts do not always materialize. It is safe to start on ten or fifteen acres at the first, with proper implements all paid for; but he should consider it very risky to start on twice that number of acres, mortgaged for more than half their value, and vines, tools, etc., obtained on credit. Fifteen acres is as much as one man can attend and do the work himself.

Show this paper to your neighbor and tell him it costs 25 cents a year. If he don't want to subscribe for a whole year he can have it on trial at the following rates: three months, 10 cents; or, six months, 15 cents. Subscribe now, while the offer is open.

Rhododendrons.

The growth of Rhododendrons can not be cut away without reducing the number of flowers for the next year. On the other hand, if allowed to grow thickly in clumps without cutting, the inner and undergrowths soon have to succumb to the stronger ones.

The *Rural and Poultry World* is a very neat and practical journal, published at 50 cents a year. Anticipating the wants of our readers, we have made arrangements to supply the *Rural and Poultry World* and FARM & VINYEARD, both one whole year for 50 cents.

Gooseberries.

A writer in the N. Y. *Tribune* says: The gooseberry is beginning to rise to its deserved place in popular estimation. We have almost lost knowledge of what good there is in gooseberries.

Gradually, however, improvement has shown itself. The old Sweetwater was tolerable, Houghton had decided merit, the Mountain Seedling was better as a bush, Smith's a larger fruit, and Downing's quite an approach to the English sorts.

The gooseberry is peculiar in being at its best for culinary use when still quite green, taking the place of pie plant when that begins to fail, and with a great deal more piquancy of flavor; a flavor so penetrating and so appetizing as to make one quite willing to wait for the full maturity of the strawberries, which come next in the circle of fruits.

Green gooseberries, like their coacids, the cranberries, keep so well that before anything was known of the present practice of canning fruits and vegetables, they used to be put into bottles, the spaces filled with boiled water, used cold, and so sealed up for use at any time. They require considerable sugar.

Our aim is to study the wants of our subscribers, and all our subscribers want seeds, bulbs and plants. You can have them mailed direct from the most reliable houses in this country. Purchasers of fifty cents' worth and upwards receive the FARM AND VINEYARD one year free.

The Gardener's Assistant.

Subjects of Interest to Growers of Flowers, Trees and Plants.

By GEORGE E. WALSH.

For the FARM AND VINEYARD.

WORK AMONGST HARDY FRUITS.

The weather has been so unfavorable for many fruits this summer, that all of the care and attention possible are needed to make the fruit crop fair. Old, established trees have not shown as much signs of suffering as the young ones, and those that are planted on light, sandy soil have succeeded far better than those situated in rich, heavy, loam soil. It is usually the trees planted in sandy soil, through which the water sifts easily, that suffer most during our summers, but the exceptionally wet weather of this year has made the very reverse the case.

The peaches should be given clean culture all through August, up to September 1. The trees should be watched carefully for any sign of yellows, and all diseased trees taken up and destroyed this fall. That is the only sure cure for the yellows and it is always successful. Whole orchards will be lost if the diseased trees are allowed to stand and contaminate the others. There is a difference, however, between yellows and yellowness. While the former is a disease the latter is merely a condition and may be due to soil-exhaustion, poor culture, severe winters, or to borers. It can usually be removed by prompt and effective investigation and action. But the yellows is not due to soil-exhaustion, for young orchards set upon virgin soil have died of this disease. The soil that is rich in the proper fertilizers, however, will resist any disease better than poor soil, and a liberal application of phosphoric acid and potash should be put in the soil annualy. This, besides giving good crops of fruit, other things being equal, will make such perfectly matured trees that they will be ready to stand the most severe winters. While they are fruiting the bone and potash should be applied freely, especially if there is a lack of vigor or an inclination not to make enough new wood growth. There is nothing like nitrogenous manure in the form of sulphate of ammonia or nitrate of soda to stimulate new wood growth in peach trees.

The apple trees have been greatly handicapped this season by the number of worms. In parts of the country millions of trees have been defoliated and the whole orchards stripped of leaves. The fruit has consequently been injured by them. The apple tree worms have been in our orchards for many years, but in 1888 they suddenly developed enormous numbers and this year it is vastly worse. It is evident that little can be done at this late stage to save the trees from their ravages, but measures should be taken to prevent its multiplication next season. The most beneficial results have been obtained by whitewashing apple trees with caustic lime. If the moss and rough scales are rubbed off the trunks first, not so as to injure the bark, but just enough to make the outer skin moderately smooth, and then a good application of caustic lime made the healthfulness of bark and tree will be increased. The bark will then offer no shelter for injurious insects, and none will breed under the scales during autumn, nor find shelter there in the quiescent state during winter. In addition to this the white surface of the tree reflects the heat of the sun and lessens the injury done to the tree by the sun both in winter and summer.

The pear trees may be treated in the same way, for the rough, scaly bark on these fruit trees is also the sheltering place of many injurious insects during winter. The pear crop has not suffered so much from the wet weather as some of the other hardy fruits. The early pears did not fruit so abundantly as the later ones, but on the whole the crop is fair. Some of the stronger shoots on free stocks may require pinching back now, but young ones having space to fill should be allowed to extend. Some shoots may also require pinching back to keep a proper balance, but beyond this the new growths should not be checked much. If allowed to grow freely this autumn they will flower next year.

Apricots have not been affected so much by the moist weather as the other fruits, for they are always the trees to feel the want of water first. They have needed but little washing from the hose so far, but dry weather is now likely to follow, so that arificial watering will be necessary. Grubs have been plentiful upon the apricots too, and their winter quarters in the rough bark should be rendered untenable by the application of home-made insecticide, strong soap suds. The chemicals may slightly discolor the foliage, but where there is little or no fruit to mark, the opportunity should not be lost.

AMONG THE VINES AND SHRUBS.

With anything like an extensive collection of shrubs constant attention must be given to pruning during the whole growing season. Where delicate and coarse growing shrubs are planted together this is especially true, for the robust plants will soon smother the less vigorous ones out of existence. For a shrub to retain all of its natural beauty and to flower well at the same time, the young plants should be pruned at the outset, plenty of room given them, and light and air admitted by pruning out the cross branches, and in midsummer by shortening the old flowering wood, and stopping the over strong shoots. The plants can then be made to produce more flowers in a smaller space than if left to grow as they pleased.

With the exception of phylloxera the mealy bug is the worst pest that the grape grower has to contend with. At this season of the year vineries infected by the bugs should be carefully attended to, and bunches of grapes examined to see if the bugs are in them. Pieces of wadding tied around the stalks bearing clusters of grapes unaffected will often keep the fruit clear of the bugs until it is ripe. Steps should then be taken to kill the bugs, and prevent their return the next season. The branches that are affected the most should be trimmed back, and the pieces cut off destroyed by fire. Then syringe the vines with warm water in which one ounce of soft soap and a tablespoonful of paraffine per gallon are mixed. This syringing operation should be repeated several times. The loose bark should also be pulled off from the big stalks, and the crevices and spurs scraped with a knife. Even the trellis should be washed with a solution of warm water and soft soap. The top soil can be removed to a depth of several inches and new put in its place. The bugs often conceal themselves near the base of the trunk just under the top soil. Such work will usually be the means of destroying all of the bugs, and preventing a recurrence of their ravages another season.

THE VEGETABLE GARDEN.

The seed stalks of the rhubarb should be cut off so as to throw the growth into the leaves and roots. If the seed stalk is allowed to grow the plant is in a measure exhausted. The moth of the currant borer is ready to lay its eggs now, and it should be kept away by frequently spraying the bushes with whale oil soap. Spinach can be sown during the latter part of August in rich land, where it succeeds the best. It should be sown wherever there is a corner in the garden not already occupied by other plants. It is a good crop, and it will keep down the weeds. The second crop of turnips, beets and carrots can be thinned now with profit. The plants should be separated about the width of a common hoe, and only the strongest ones should be left. In Europe, where crops are extensively grown, the hoe, instead of the hand, is always used for thinning, and this implement could be used successfully in this country. If a crop is removed and another garden crop is not desired, it is a good practice to sow the land with rye. The rye will form acceptable fodder for the animals during fall and spring. Buckwheat can also be planted and turned under as green manure.

Celery for winter and spring use should already be in the ground, but that which is intended to keep through winter should not have any earthing beyond the first handling until the last of October.

WATER LILIES IN TUBS.

Water lilies cultivated in tubs, or in rookeries where there is plenty of water, are as beautiful and fragrant as the river and pond beauties which we all so much admire. If a tank can not be obtained for them, an old cask or hogshead will answer all purposes. Saw it in two and sink the halves in the earth. Then gather muck from some pond or river and fill the tubs half full. Sprinkle a thin layer of sand over this. The lily roots can now be pushed into this muck, and the whole covered with water. The roots will get a start before cold weather is here. Then the tubs should be removed to the cellar, and kept there until spring. Beautiful pond lilies will be had the following season, which will give a handsome appearance to the flower garden. There are several other varieties of lilies besides the common white water lily, which can be grown in tubs for the flower garden. Any florist will have the roots for sale. Some of these famous beauties are rose color, others creamy white and pink, others deep red, and a few a beautiful purple. When grown all together in one large tank they make a beautiful appearance.

First of the month is still time enough to plant half-long beets, also Rutabaga turnips, which will have ample time to mature. The white and yellow Swede will have ample time if planted last of the month. Frequent dustings of air-slaked lime and turpentine will be effectual. One pint of turpentine to one bushel of lime, well mixed, and to stand till dry and thoroughly impregnated with the fumes of turpentine acts as preventive and remedy.

String beans and peas can be planted and mature a crop safely.

Lettuce for fall should be sown and will be in good condition to head on the approach of cool weather.

Succession crops of radish may be planted also.

Early varieties of corn will mature if planted on the first of this month in New Jersey and is quite often a more profitable crop than the first.

Spinach and kale also, can be planted this month, and remain to be wintered over for early spring cutting. It should have time to nearly mature, in order to withstand the action of winter. Of late years this crop has been nearly abandoned, from the fact of the importations from the south, which is in better condition and arrives as early as January.

Celery being the most important crop to be planted this month, should have the soil most thoroughly prepared, and it should be very rich, better from previous applications than to depend upon a liberal dressing at setting time. Celery is a gross feeder, but it also wants its food material in a digestible condition, as is demonstrated from the rank, dark growth produced through the application of liquid manure. Such manure can not easily be secured, also the application is attended with considerable risk as well as expense. In New Jersey, except a few favored spots or celery bogs that exist naturally, it is a difficult matter successfully, all points considered, and since the enormous shipments from Kalamazoo to our principal market many have abandoned the crops as the cost exceeds the returns. The only profit derived is from the late grown, such as can be stored as late in November, and be in condition to market during February and March, after our western competitors are done. The distribution of Kalamazoo celery extends to nearly every village throughout the east, and deprives home cultivators of even their next door market. If gardeners were like manufacturies they would seek some protection, and justly, too, from what has grown to be one of the huge monopolies of both the market and the laborers that produce it.

Outside of peat soil, the home of celery, the best I have found is a good stiff red clay subsoil underlaying a sandy loam not less than eight inches deep. In such a soil with enough labor and manure celery can be grown if planted late in August that will make good celery in size by the second week in November, and then stored is in condition for table at the time stated, February and March, crisp, tender and sweet, which can not be said of any Kalamazoo celery I ever ate.

If we could only realize that "there's always room at the top," that "there's no royal road to wealth," any more than there is to learning, we would, as a body, do better.

We will send to any address in the United States the *New York Weekly World* and the FARM & VINEYARD, both one whole year for a dollar bill. Now is your time to subscribe.

Golden Elders.

Golden Elders are extremely effective in summer, planted at intervals between other shrubs or in masses. They might be used extensively where only a summer display is required, as Elders are unfortunately deciduous. They transplant very easily, and may be kept quite dwarf by pinching out the points occasionally in summer. The leaves are of a bright golden color if in an open, sunny position. Silver Elders are very liable to revert to the green form, but so far as I have seen the Golden Elder has shown no signs of reversion.

The Cosmopolitan is published at $2.40 a year, and is considered cheap at that; but look here, $2.00 gets the *Cosmopolitan* and FARM & VINEYARD, both for one whole year if you send your order to FARM & VINEYARD, Erie, Pa.

Marguerite Carnations,

a distinct new race, with double flowers and in various colors, are a valuable addition to our list of summer subjects for cutting. They are somewhat after the "Grendin" carnations, which are very popular and are still grown to a considerable extent. The "Marguerite" form is exceedingly early flowering, commencing to bloom in August from April-sown seed. "Sweet Williams" and "China Pinks" are invaluable, the single form of the former and the double form of the latter in their many colors. A special word of praise must be given to the Heddewigi section of China Pinks, especially the double forms.—[Extract from a paper read before the Philadelphia Florist Club.

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Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 50 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

A Few Practical Hints to Farmers About Crops.

By Albert H. Rhodes.

For the Farm and Vineyard.

In religious matters, now is the acceptable time, and with the farmer, too, the same rule holds good. To defer till to-morrow is many times fatal to success. When your crop is just right to harvest put in the reaper; when your hay is fit for cutting put in the mower; when your wheat is dry and fit for the barn or for the thresher, draw at once, as promptness is only another name for profitableness or success. One day may change the entire programme. A long drizzling rain, or a sudden shower with high wind, may make you a great deal of trouble. Better be prompt. Earliness may be the door to successfulness in very many matters appertaining to farm life. I noticed some wheat last week still uncut. It was getting crinkled down and lodged and the birds and vermin were getting in all the damage possible. I thought perhaps 25 per cent. had already been extracted from that farmer's profits. I also observed several corn fields which had not been cleaned out and thought 50 per cent. would not be too much to reckon off for the neglect. All grass is now fit to cut in our county, and perhaps four weeks hence some of it will still be standing. The seed will all shell off and a dry, woody stock with a little green rowen in the bottom will constitute the hay when it is finally cut. This will be worth not one-half as much as hay cut when it should be, just as the bloom leaves it on timothy, or when in full bloom in clover, and every farmer should sit down and reckon the depreciation of his crop at 50 per cent. who cuts his hay so late. But, says some of our old farmers, if you cut before the seed begins to shell your meadows will run out. Well, what object is there in having meadows if one must lose one-half the nutritive value by deferring your harvest till your hay crop is comparatively worthless? Better save an acre for seed and go over your meadows just before the fall rains not only with timothy but with blue grass and orchard, and white clover, and red top, and mountain meadow, if any of your meadows are low and moist. This annual seeding, with an occasional harrowing and rooting will keep your meadow in much better condition than neglecting your haying till the seed falls to preserve them, beside giving your stock good nutricious hay to eat, which will keep them in condition and ready for market. Thus taking time by the forelock and using promptness is the only road to success in agriculture. It is the same in everything else—to plant in season, to cultivate in season, to harvest in season. We are presumed to have these till the end of time, these seasons, and if we neglect them and do these things clearly out of season we can have no cause of complaint if our harvest is a failure. I hear one now and then tell of a late corn crop which was an extra crop, and he having raised one such crop was never going to plant his corn till into June. But an early frost will bite such a crop, say I, and I had rather be on the safe side. A late crop means a late harvest and cold fingers, with perhaps losses by exposure to storms and a hard freeze. My motto is, seed early and harvest early, and your chances for a reasonable profit will be greater. Potatoes should be dug before the fall rains have drenched the ground, and housed dry in a cool cellar to insure their keeping well.

Elkcreek, July 21st.

Getting the Benefit.

By F. S.

For the Farm and Vineyard.

If thoroughly done in good season complete cultivation can in a measure be made to take the place of manure, at least to an extent to receive a good thrifty growth, which without the growth would be very unsatisfactory.

In nearly all soils there is more or less plant food that is not available because it is not soluble. Thoroughly stirring the soil and keeping fine brings a larger surface exposed to the influence of the sun, air, and moisture, and then aid to make latent plant food available, and a better growth will be made. In order to receive the best results it is very important, however, to secure a good tilth and to stir frequently. While the plants are young get them well started to growing and it is a much easier matter to maintain a steady growth.

The better the soil is prepared before the seed is planted and the better the tilth while the soil is young, the thriftier the growth. Earliness and thoroughness are very important in receiving the best results. The more thoroughly and frequently the soil is stirred the larger will be the supply of available plant food. In the garden if the soil is raked fine, is stirred with a light cultivator every morning early while the dew is on, much better results can be secured in a thin or partially worn out soil Of course as good results cannot be secured even with the very best of cultivation in a thin soil as is possible with a good rich soil, but thorough cultivation given early will often secure a profitable crop in a soil that if special care is not taken in this respect the results will be far from satisfactory.

It is important at all times to give thorough cultivation in order to secure the best results, but with a thin soil when there is not a full supply of manures or fertilizers it is especially so, as the cultivation, if sufficiently thorough, can be made to take the place to some extent, at least, of manure or fertilizers. Even with the best of management it is difficult to secure a sufficient amount of manure to build up a run down soil, and if a good crop is secured the cultivation cannot be made too thorough.

The peach-growers of the Delaware eastern shore and peninsula report that the early varieties of peaches are rotting on the trees, and the picked fruit bears little handling. Crowded trees and the recent heavy rains have caused this rotting and prevented maturing. Trees are breaking with the weight of fruit,

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Any person who has no use for any of our premium offers, should write for our liberal cash commission to agents.

The agricultural building at the world's fair is, by many architects and artists, considered to be second in magnificence only to the administration building. It will cover a space of 800x500 feet, almost surrounded by lagoons and canals. In design it is purely classic, and the exterior presents a richness of decoration skillfully handled so as to produce a most pleasing effect upon the mind of the beholder. The features of the building are the great central pavilion and the four pavilions at the corners. The grand entrance to the north is 60 feet wide, and leads into a vestibule 30 feet deep and 60 feet wide. Corinthian columns 5 feet in diameter and 40 feet high form this entrance. Beyond these is the rotunda, 100 feet in diameter, surmounted by a glass dome 130 feet high, under the centre of which is a colossal statute of Ceres, surrounded by other allegorical groups of statuary. A broad collonade will connect the building and the palace of mechanic arts, the whole forming one of the many superb agricultural groupings which will continually be found throughout the whole vast space of the exposition, and which form the highest triumph of the scheme of the architects.

Notice of our new list of Agricultural and Horticultural Book Offer this month. Every order amounting to 50 cents and upwards, carries with it a years' subscription to Farm and Vineyard,

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The man who attempts to raise an orchard of young trees in grass has no right to complain about the depressed condition of agriculture. He practices depressed methods.

Judge Bell, of Montrose, expects to sell $2,000 worth of fruit from his young orchard this year. This orchard comprises 105 acres of nearly all the standard and dwarf varieties of deciduous fruits, and is scarcely in its fourth year. The majority of the trees are but three-year-olds. It will be a heavy producer in 1893.

We are still offering the premiums previously offered. Don't you think you could get us a club if you tried.

If the Farm and Vineyard is missing any month, write directly to this office and we will promptly forward a duplicate of any copy, to which you are entitled.

Horticultural Notes.

At a meeting of the Massachusetts Horticultural society was urged the advantages of instruction in horticulture in public schools.

T. T Lyon reports the yellow transparent apple as hardy, productive and more free from scab than any other early apple.

The California Fruit Grower says that melons may be obtained a month earlier than usual by planting the seeds in squares of sod which have been placed in a warm, sheltered spot or frame, where they can be protected from frost. As soon as danger from this source is past the squares are removed and set in the fields where wanted.

Mr. Fairchild says there is no remedy for twig blight except to cut off and burn.

Farm & Vineyard

Premium Offer Extraordinary For the Benefit of all the Wives and Daughters.

To any one who will send us *only three subscribers at fifty cents each*, we will send this

Complete Washer.

Price $5.00, or we will send the Washer for one subscription at 50 cents and 75 cents additional. There is not a woman who reads this paper, but can become the possessor of one of these valuable machines, by spending a few hours among her neighbors to secure the subscribers.

The paper alone is worth every cent we ask for it, but as an inducement, to all who read this, to become permanent subscribers, we make this liberal offer.

Show this copy of Farm & Vineyard to your friends, and if they can't pay you cash down for a year's subscription, you can well afford to wait on them for a few weeks for the sake of securing this valuable washer at so small a cost.

Send us the names now with the cash and we will commence mailing the paper and ship the washer at once by Express, with explicit directions how to use it.

We have *thoroughly tested* this machine and know it will give entire satisfaction, furthermore the manufacturers, (who are responsible) authorize us to warrant every machine for five years. It will fit any tub and will do all kinds of washing with a saving of more than half the time and labor over the old rubbing process.

Send in your Clubs and give us the name of your express office. The charges will not be excessive as the washer is light and must in all cases be paid by the receiver. Address,

FARM & VINEYARD PUB. CO., Erie, Pa.

The Poultry Yard.

Early Versus Late Pullets.

"There is something remarkable about those 1st of June hatched chicks not maturing sooner. One would say that if chicks hatched in April could be got to laying by October 1, certainly 1st of June chicks should be matured in November, or by December 1, but they won't. Just so sure as the cold weather catches them in an immature state, just so sure they will remain immature. The cold seems to task all their vitality, and they have nothing left for growth. The chicks seem to be stunted, checked, by the cold." The foregoing is from *Farm Poultry*, and expresses a current impression which a writer, with several years' experience, questions as follows, in the *Farm Journal*:

"What we think we have learned is this: That early pullets will attain a larger size and more perfect development than late ones, and are better for use early in the following season for breeding stock, but that for laying purposes the June hatched pullets come into profit just as soon as the April hatched. After a fair trial we ceased to keep March and April pullets, and reserved for our own use the later hatched, selling the former, pocketing the cash and saving feed and risk.

Short, Stocky Birds.

The way to get short, stocky birds is to hatch them in the fall. If you take a pair of birds, and use eggs from them in the spring, the result will be the same kind as the parents, but if the eggs are hatched in the fall the chicks will grow until frost sets in. When spring opens they will thicken and grow chunky, but the legs will be no longer than they were when they stopped growing in the fall. Try the experiment and it will surprise you to note so great a difference in birds hatched in the spring and in the fall, and from the same parents. It is because the longer the growing season the better the opportunities for obtaining height.—*Our Country Home.*

Kill Off the Old Hens.

If farmers would kill off all their old hens and young cockerels, and select the most promising early pullets to take the place of the hens; divide the remaining flocks into lots of a dozen, and give each a separate place for perching, allowing a yearling cockerel or two-year-old cock of one's own raising, if not closely related, there would be a vast increase in the production of eggs. One or two settings of eggs of another strain would give him cockerels for breeding. And the houses could be got up cheaply; in a pinch, straw or corn stalks could be utilized for much of the material.—*National Stockman.*

It is claimed that if fowls get soft food when going to roost, it is digested early in the night, and they are hungry before morning, and that this is avoided by giving whole grain.

Watch the markets and sell at the season when prices range high.

Eggs for Setting.

If eggs for sitting are kept on their sides they should occasionally be turned, so as to avoid the possibility of injury through shifting or bulging the membrane (partition) between the egg substance and the air chamber at the large end.

Turkeys.

Young turkeys will lay more eggs than older ones, but not of as large a size; neither are the young birds so strong and healthy as those hatched from eggs laid by two and three-year-old hens. For the same reason eggs from late-hatched birds of the preceding year will not produce as fine birds as eggs from the stock raised earlier in the year. If obliged to breed from young hens, let the gobbler be two or three years old, or even older, and not related to the hens.

We want an active agent at every fair this fall. Write for our terms, it will pay you.

Farm and Vineyard is one of the periodicals mentioned in Geo. P. Rowell & Co.'s Book for Advertisers.

If you have any article you wish to sell, advertise in Farm and Vineyard.

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that can not be cured by taking Hall's Catarrh Cure.

F. J. CHENEY & CO, Props., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last five years, and believe him to be perfectly honorable in all business transactions, and financially able to carry out any obligations made by their firm.

West & Truax, wholesale druggists, Toledo, Ohio.

Walding, Kinnan & Marvin, wholesale druggists, Toledo, Ohio.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75c per bottle. Sold by all druggists.

If you have anything for sale advertise in the Farm and Vineyard. We guarantee good results, provided you offer the right articles. Many of our readers write and inquire where they can purchase full blooded cattle, poultry, pigeons, dogs, sheep, pigs, etc., hence our offer to insert breeders' cards at the low rate offered on page 16.

A farmer should first find out whether or not his cow is capable of producing a profit before beginning to feed her on scientific principles. There are thousands of cows that could not produce a cent's worth of profit on the best feed on earth.

The cost of keeping a cow has been shown to be about ten cents a day, or $36 a year. Any variation from this is probably offset by the difference in value of products. If a cow will not pay this per year she is worse than no cow.

BROWN PATAGONIAN FOWLS.

Their Origin and Their Leading Characteristics.

Rural New Yorker discourses as follows on the Patagonians, black and brown, the latter being the preferred sort:

Several years ago a seedsman advertised a "new breed" of poultry—the Patagonian. A thrilling tale of a seaman who found a coop of these birds on board a South American ship served to give the breed a start. It went up like a rocket, but came down heavier than a stick. We bought several settings of the eggs, some of which failed to hatch at all, while others gave a variety of chickens of all sizes and colors. This seemed to be the experience of most of those who bought eggs, and the "Black Patagonians" are now practically unheard of.

Last year, however, we began to hear of the "Patagonians" again. While visiting Mr. C. S. Cooper's poultry yard to look at his Wyandottes, we noticed a pen of unique and strikingly handsome birds, different from anything we had ever seen before. At first sight they seemed to be small dark Brahmas, but an examination quickly showed that they had several distinct markings.

"What are those birds, Mr. Cooper?"

"Brown Patagonians! This breed is a 'sport' from the old black Patagonians."

The birds were so handsome that we bought a setting of eggs. The hen, "Princess," shown in the cut, was hatched from this first brood. The picture is an excellent likeness of the hen.

"Princess" weighs about 6½ pounds. She is dark gray in color, with delicate white penciling in the feathers. Her legs are short, yellow in color, and lightly feathered. The comb is small and fully protected by a crest or "top knot," which gives the birds an airy and spirited appearance. The body is round and plump, with an astonishing amount of breast meat. In fact, if one could take a small

BROWN PATAGONIAN HEN "PRINCESS."

dark Brahma hen, change her color a little, diminish the size of her comb, add a top knot, take some of the feathers from her legs and make them shorter, thicken her body and add breast meat and double her intelligence he would have a hen like "Princess."

Regarding the origin of the brown Patagonians Mr. Cooper tells that he bought a breeding pen of black birds for pure Phtagonians. The first season he obtained a few brown chicks from their eggs, reserved the chicks and sold the original black ones. The succeeding season he had a mixture of brown and black chicks; preferring the browns, he disposed of the blacks and reserved browns only. These are the counterpart of the original purchase except in color. They are said to be hardy, fair layers of eggs and good table birds.

We want a bright boy or girl in every township, to take orders for Farm and Vineyard, and our beautiful picture, Christ Before Pilate. The paper a year, and the picture, both for 50 cents. It sells on sight. Some of our boy and girl agents are making from $5 to $20 a month. Write at once for terms.

Any lady who accepts our "premium" offer on page 4, and is not well satisfied with her bargain will have her money refunded on application.

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References:—Third National Bank and Mercantile Agencies.

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Safe and Sure. Send 4c. for "WOMAN'S SAFE GUARD." Wilcox Specific Co., Phila., Pa.
Mention Farm and Vineyard.

NEW MUSIC BOOK.
On the first day of May we shall place on the market Professor CHARLES F. ESCHER'S NEW BOOK, entitled
OUR HEART'S DELIGHT; or, Sweet Melodies of the Past and Present.
being a compilation of vocal and instrumental music, adapted to piano or organ. The work will contain the best and most popular selections of the renowned authors of this and foreign countries. **32 full-page lithograph portraits of famous vocalists, instrumentalists and composers.** Nearly 450 pages. **Size 10 x 12 inches.** Durably bound in cloth, stamped with appropriate design. This work is especially intended for musicians who desire **a variety of choice pieces.** Contains plenty for the beginner, and a good supply for the inexperienced. **Over 4000 advance orders already received. AGENTS WANTED in every town to to begin May first.** We guarantee satisfaction, and refer you to Dun's or Bradstreet's agencies for our responsibility. **Goods on 30 days' credit.** For special terms, etc., address
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ORCHARD AND GARDEN.

TOPICS OF IMPORTANCE TO FRUIT GROWERS AND GARDENERS.

The Tuberous Variety for Bedding on Lawns—One of the Best Foliage Plants Suitable for Window Culture—Hints for Timid Florists.

The tuberous begonias, which are admirable plants for bedding on lawns, have not been pushed in this country as much as they deserve. There is a general idea prevalent that they require unusually careful culture and that they are difficult to handle during the period of rest.

BEGONIA SCHARFFII, ONE OF THE BEST NEW FOLIAGE BEGONIAS.

With a view to encouraging timid florists, we here give some notes from American Garden on the subject of begonias. For bedding use tubers, which are so cheap there is no necessity to trouble with seedlings. During the summer give all the air possible and keep the temperature down by dampening the walks with cold water. Never wet the foliage after they commence flowering, but before that stage syringe freely. When planted in frames it should always be after the bottom heat is "spent."

The tubers or seedlings, after they have first been transplanted into flats, can be planted directly in the soil or set in pots or flats. Keep the glass on till the plants get a good start. They need to be slightly shaded as soon as flowering begins—just enough to keep the sun from burning them. There is no more trouble in keeping the tubers than there is a potato. After they have been dried sufficiently for the flowering stem to separate freely from the tuber shake them out, cover with dry sand and place in a cellar that will keep a potato in good condition.

Begonia Scharffii, depicted in the cut, is classed among soluble foliage plants that are well adapted to window culture and a grand plant for brackets, where it shows to the best advantage. It is not one of the tuberous rooted section.

Requirements of the Ash and Sycamore.

The ash and sycamore are two hardy and very accommodating forest trees that, in good soil, prove remunerative. The ash wants a deep and damp loam to grow it to perfection, planting it on light gravelly soil, chalk, rock, or heavy clayey soils being sure death to the tree. As for the sycamore, it must be admitted that a poor soil will never produce fine timber, it requiring that of rich and loamy texture to grow clean and valuable trees.

There is a great amount of truth in the advice to plant sycamore largely for economic purposes, that is where the soil is suitable, for that it grows quickly and needs no usual care is well known, while it will always command a good price, perhaps better in the future than in the past. Ash being largely in use for most purposes where great strength and elasticity are required, is likewise a valuable tree to grow, but it must be provided with a suitable soil, else the growth is meager and the timber of but second class value. In many situations larch and oak would be quite as profitable to grow as the sycamore and ash, so that before planting it will be well to consider first the quality of the soil to be planted, and second, local or other demands for the timber.

Some Remarkable Hybrids.

As a matter of history it may be stated that The Rural New Yorker was, so far as known, the first to produce a cross between a hardy (Austrian) rose and rosa rugosa; that Bruant was the first to produce a cross between a tea and rosa rugosa; that Professor William Saunders was the first to announce hybrids between the blackberry and raspberry (the plants were destroyed before fruiting); that The Rural New Yorker was the first to fruit hybrids between the blackberry and raspberry; that The Rural New Yorker was the first to produce hybrids between rubus phœnicolasius and rosa rugosa, and also the first to produce hybrids between the blackberry and rubus phœnicolasius. The development of the last two will be watched with interest.

The Camellia.

In its natural state the wild camellia has single red blossoms, and that description of the plant is much used by gardeners as stock on which to graft the many fine varieties produced by florists in Europe and America through hybridizing. The single sorts are produced by seed; the plant is also propagated by cuttings and layers. The best known and most general favorite is the Camellia Japonica. The most hardy and one of the most beautiful camellias is the Reticulata, from which many others in cultivation are partly derived.

The plant does not need heat, thriving best in a temperature a little above freezing point, but it cannot bear frost. Free access of air is of great importance, and a liberal supply of water, but not so much as to keep the soil soaked after the needs of the plant are supplied. They are grown best in well drained borders, under glass. An attempt to cultivate camellias as window plants in pots generally results in disappointment, the roots not liking such close confinement, and there is apt to be too much heat or an excess of water, causing the buds to fall before opening. The best soil for camellias is a loose mold composed of black loam, peat and sand. —California Fruit Grower.

Management of Hedges.

Hedges if properly managed are an ornament to any garden or lawn. To form a thick and substantial hedge, according to Popular Gardening, a beginning to train must be made from the first year it is planted. Keep the bottom well supplied with growth. Do not, on any account, let it run up to any height until this is done. Then the plants will thicken, and may be allowed to increase in height gradually. Thorn hedges should be clipped carefully about the present time. Another important point is to keep the stems free from weeds. This particularly applies to thorn hedges.

Horticultural Hints.

Pot plants watered with a mixture consisting of ammonia, one teaspoonful to two quarts of water, will gain thrift and luxuriance.

The Bordeaux mixture offers to be a trustworthy remedy for the fungous diseases of the grape.

Too much manure on blackberries will induce too much wood.

There is now a purple leaved variety of the common catalpa.

A little lime water occasionally will kill the angle worms in the soil of potted plants.

TRANSPLANTING CABBAGE PLANTS.

Directions Concerning an Operation of Importance to the Prospective Crop.

The best soil for cabbage is a rather sandy loam, not less than ten inches deep and with good drainage. A proper pulverizing of the soil is important, and

PLANTING SPINDLING CABBAGE PLANTS.

when it has been plowed the previous fall so much the better. Well rotted manure for early cabbage ought to be sown broadcast.

It ought to be borne in mind that cabbage is a hardy plant, hence when wanted for an early crop may be set out in any section as soon as the soil is dry enough to work.

In the illustrations here reproduced from "How to Make the Garden Pay" are shown various ways of setting the plants. Greiner, the author, says on the subject:

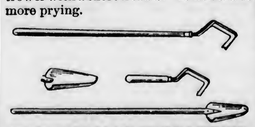
Cabbages may be set either straight down or slanting, according to depth of surface soil and length of stalk. In either case roots will form all along the stems, and the heads will grow closely above the ground, instead of being held high up as if on stilts. The contrast between deep and shallow planting here illustrated speaks plainly in favor of the former. The advantage which deep feed-

RESULTS OF DEEP AND SHALLOW PLANTING.

ing roots give to a plant by establishing a direct communication with the stratum of uninterrupted moisture is so great that some gardeners even prefer setting tall, spindling plants to short and stocky ones.

Use for Broken Trowels and Weeders.

Knock out the old rivets. Then level off the lower end of a small broom handle and rivet securely to plate, as shown in illustration. This makes a very useful implement for digging out plants from the center of cold frames, hotbeds, etc., also for lifting plants anywhere in the flower garden. For many uses this will be found much more convenient than a trowel with a short handle. It will stand more prying.



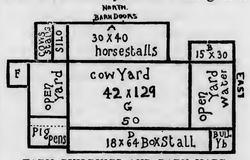
BROKEN WEEDERS AND TROWELS UTILIZED.

It is also of advantage to form a V shaped notch in the end of blade, as it will enable the operator to easily catch on to the plants, and as it prevents slipping when weeding or thinning out plants that are growing close together. This may seem a little thing, nevertheless the extra amount of work accomplished will be considerable in the long run. The foregoing is from Popular Gardening.

FARM BUILDINGS.

How These Multiplied and a Covered Barn Yard Resulted.

Eight years ago, writes a Pennsylvania farmer in Hoards' Dairyman, the only buildings on my farm were those on the accompanying sketch marked "A," 30 by 40 with 20 foot posts, and "B," 15 by 30, with 10 foot posts. The former had a barn floor through the center 14 by 30 feet, and was elevated on a stone wall on three sides, high enough for stables underneath. The latter was separated from the former by the entrance gate to



FARM BUILDINGS AND BARN YARD.

the barn yard, which was simply an inclosure surrounded by a board fence seven feet high, and sloped away to the south, and was admirably arranged so that all the liquids could run away nicely, leaving the yard always dry. The same autumn I added the building "C," 20 by 30 feet, to have room for vehicles, tools, and some fodder and hay. One-half of this has since been made into a silo as indicated on the sketch.

The following spring I saw so many dollars going down the slope in the golden liquid that I determined to make a basin of the clay soil of which the yard was formed. This I did by making it about thirty inches deeper in middle than at edges and a regular dish shape. At the same time I found a necessity for more stable room, and a little later erected the shed "D," 16 feet by 64 feet, divided into six box stalls, with one entry on the south side.

As more room was needed in a year or two, the buildings "E," 24 feet by 32 feet for pig pens, and "F," 16 feet by 20 feet, with posts 24 feet, for tools underneath and fodder above, were erected.

This, it will be observed, nearly surrounded my barn yard with buildings, except on the east and a small section on the south and west, and although all roofs were spouted to carry away the water, we began to experience the serious difficulty of too much water. The yard held all the water that fell in it and the full length of high top rubber boots was necessary to enable us to get about. As a temporary relief we had to cut a channel out one side of our dish and let the golden liquid flow away again. It began to dawn upon me that a covered barn yard would be a good thing, and as the farm was becoming more productive and more room necessary—barn floor space being especially deficient—the following plan was resorted to: The space marked "G," 42 feet by 50 feet, was covered by a barn, with posts 20 feet. This barn was set on sixteen posts of round white oak about fourteen inches in diameter, mounted on stone pedestals and high enough so that the threshing floor came level with the old barn floor and in line with it. This increased our threshing floor to 72 feet in length and covered a large area of the yard. This seems to meet the required want. It furnishes a cool place in summer and a warm place in cooler weather, and protects the manure from bleaching rains and bleaching suns.

The Rural New Yorker commends Michel's early as the best of the notably early strawberries in cultivation.

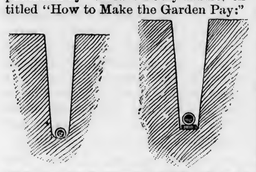
American Garden calls attention to the Merkel, a new red raspberry wholly distinct from all other varieties and possessing several valuable qualities.

FARM AND GARDEN.

INFORMATION OF PRACTICAL IMPORTANCE TO RURAL READERS.

Precautions to Be Taken in Laying Tiles So as to Insure the Effectiveness and Permanency of the Draining Operation. Board Trough in Drains.

Next to perfect grading of the bottom, the effectiveness and permanency of the whole draining operation depends on the careful laying of the tiles. The work should never be intrusted to a raw hand, unless the latter is endowed with an unusual amount of common sense, skill and intelligence. It is not safe to run the least risk of having this important work slighted. Following are instructions given by T. Greiner in the work just published by William Henry Maule, entitled "How to Make the Garden Pay:"



TILE ON SOFT BOTTOM—TILE ON CLAY BOTTOM.

Laying the tile should follow immediately upon the leveling (grading) of the bottom, and in order to perform this task without stepping into the ditch a six foot pole with a one-quarter inch iron rod fastened to the end and bent in the form of an elbow is used to handle section after section of tile, and placing it in its proper place. The ends should be closely fitted together, and clay subsoil firmly packed around them to hold them in their place, until the ditches can be filled up again to the top. Fine surface soil or anything that will decay should not be put immediately in contact with the tiles. It is also essential that the point of discharge in the laterals should be a few inches above the level of the main, to insure a good flow. It is obvious that the tiles can be laid directly upon the bottom of the ditch when the subsoil is perfectly hard and solid, especially if of stiff clay. Soft muck or quicksand in the bottom of drains makes it necessary to rest the tiles upon a line of narrow six inch boards placed in the drain, as here illustrated,

In some instances tile cannot be readily obtained, at least not without paying heavy transportation expenses, and other means of constructing the drain have to be found. I have used board troughs with excellent results. The poorest kind of lumber may be utilized for this purpose. Two boards are nailed together at right angles and held firmly in place by strips nailed diagonally across. Such

BOARD TROUGH IN BOTTOM OF DRAIN.

troughs may be placed directly upon a carefully graded, hard, stiff clay bottom, or upon a line of boards placed upon soft bottom in same way as the tile. Stones and pebbles, where plentiful, can be used to good advantage also; but to get a properly constructed drain with such material the inexperienced owner will always find it safest and cheapest to have the work done by somebody that understands it. Tile is always best, and drains thus made will be of more lasting value. All stone drains are quite liable to get choked up after awhile, since it is almost impossible to keep the soil from washing and working among the stones, and finally fill up the throat.

But tile drains, if ever so well laid, cannot be expected to last forever, and often they give out quite unexpectedly, making it necessary to take up parts of them for repairs. In an emergency of this kind it is quite convenient to know the exact location of every drain and to be able to find it without having to dig over a large area. A map showing the location of every tile drain put down, with distances marked in rods and feet, will be of great advantage and a valuable assistance sooner or later.

How to Kill Quack Grass.

The following conversation took place at a New York Farmers' Institute:

"What is the best way to kill quack grass?"

E. Van Alstyne—By summer fallowing and not allowing it to grow any all summer, or by putting in hogs enough to root it out. This can be done by fencing off the patch and scattering corn over it to induce the hogs to root.

Col. Curtis—The roots of quack are very sweet and palatable. These make fine food for hogs. Mr. Van Alstyne is right—convert them into pork. It can be done easily. The quack patch is just the place for the little pigs, as they will be active in digging the roots out, and there is nothing better for them, together with grain food, as the roots will make the bulk they require and keep them healthy; besides, they are very fattening. Quack grass has the most value under the ground, and the pig is the natural factor to utilize it, only give him a chance.

The Fowls for a Gourmand.

"Trixie" believes the Leghorns the only fowls for a gourmand. Henry Hales thinks a Dorking infinitely superior to all others; Irving Crocker extols the Wyandottes; Uncle Felch claims the Brahmas as the champions, while Rudd, Thompson and others find the Plymouth Rock the finest table fowls in the land. We always believed in the Wyandotte, but past experience brings to our mind the toothsome meat of the game fowl, and, honestly speaking, the game stands very close to the front under all conditions, says a contributor to The Fancier's Journal.

Galled Shoulders.

John M. Stahl wrote fifteen years ago that the best preventive of galled shoulders is to bathe the shoulders each evening with salt water. He has written it several times since, and he again calls attention to it in The Farm Journal. He says to tie a cloth around a corn cob, with which to apply the salt water. Begin its use a month before the plow begins and continue it through the working season.

Agricultural News and Notes.

The executive committee of the World's fair directory has voted to give cash premiums in 1893 for the live stock exhibited.

The California legislature is to be asked to provide special legislation to encourage the culture of ramie in California.

An average crop of hay in the United States is estimated at 40,000,000 tons, and the value estimated at $387,000,000.

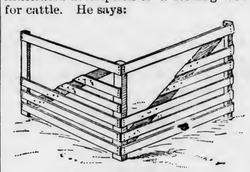
It is believed by many that sheep ranching is destined to supercede the cattle industry on the plains.

The American Banner oat introduced by Vick, according to report, ripens early, has a stiff straw of good length, with grain white, large and plump.

FEEDING BOX FOR CATTLE.

A Virginian's Plan for Feeding Cattle and Restraining "Uglies."

A Virginia correspondent writing to Country Gentleman gives the following illustrated description of a feeding box for cattle. He says:



A GOOD FEEDING BOX.

As I soil my cows I have been annoyed with racks and other devices where on or two master cows would keep away all the weaker ones until they could fill up and walk off. From the box here illustrated four cows can feed at a time and neither reach the other, as they stand at opposite corners. By laying a 15-foot pole at each corner, fastening the larger end to the top of the box, and letting the smaller end rest on the ground, a practical stall is made for each cow, restraining the "uglies" from going around so often.

The boxes are 5 feet high and 6 feet square; have no bottom, and are cleaned by turning them over. The materials are scantling 2 by 4 inch and 20 feet long; for the sides, inch boards 6 inches wide and 12 feet long; and for the braces, 1½ inch boards 8 inches wide and 16 feet long. These cut without waste, giving six 6 inch strips on each side. Similar boxes have been illustrated before, but this one has an improvement in the top bar which prevents the cow getting into the box. For convenience only five side strips are shown; the number will vary with the width of lumber used or the maker's fancy.

Gypsum for Clover.

The plants that derive profit from gypsum include all known to the agriculturist, but some more than others profit by the fertilizer, says American Cultivator. Clover stands at the head of the list as one responding quickly to the application, and it will often make all the difference between a good and a bad crop of clover whether the gypsum has been applied. One hundred pounds of land plaster to the acre, sown broadcast, will prevent a clover patch from being burnt up by a dry spell, and 200 pounds spread over the fields beforehand will give the clover a splendid start. It may be sown at seeding time, or when the plants are up, but the former method seems preferable, for it will then enable the plants to get a good catch. Gypsum is thus made the foundation of a good crop of clover, and if the young crop is threatened by a drought gypsum can come in as a topdressing. Even during very severe droughts land plaster will avert direful calamity in the clover field if applied early enough, says the authority quoted.

Things Told at Bee Meetings.

Mr. E. L. Pratt, of Beverly, Mass., in an address before a farmers' meeting in Boston, said on the subject of hives: "For either box or extract honey the eight frame size is about right, though I have been successful with seven Langstroth frames to the hives. It is natural for bees to store honey over the brood, therefore all honey receptacles should be adjustable to the top and directly over the frames, so arranged that two or more can be tiered up, according to the amount of honey being gathered. The standard box is of one piece and 4½ inches square. Any other size is a drug on the market in the majority of cases."

At this same meeting Mr. W. W. Rawson, of Arlington, the well known Massachusetts market gardener, told that he is obliged to keep from fifteen to twenty swarms of bees to use in greenhouses for the fertilization of cucumbers. He is confident that if he did not have bees he would have no cucumbers, as he does not attempt to fertilize by hand.

Mr. Lyon, who has had considerable experience with foul brood, said, at the meeting of the International Beekeepers' association, that he had tried all the drugs recommended without success, and finally shook a colony into a new hive on comb foundation and was surprised to find them all right after that. L. W. Baldwin told at this same meeting that he had cured foul brood by shaking the bees out of the hives upon sheets of foundation.

What Others Say.

Says Rural New Yorker: A commercial bushel of potatoes weighs as much as a bushel of wheat, but the bushel of potatoes is four-fifths water, and it ought to be, and is, as easy to grow five bushels of potatoes as one bushel of wheat. And yet it is not uncommon for a bushel of potatoes to command as high a price as a bushel of wheat.

W. L. Rutherford, a successful breeder of Jersey cattle, says: In selecting breeding stock see that the dam is individually good; that the sire has an unbroken pedigree and is of a good strain, and especially that he has a good dam. It is an old saying that "the bull is half the herd." In my own experience I find the influence of the dam on the offspring to be greater than that of the sire.

Mr. Powell says a pig to be most profitable to the grower must be slaughtered at from 50 to 150 pounds. Beyond the latter figure the maintenance ration, he thinks, is too great.

Bees Absconding for Lack of Food.

A frequent cause of the desertion of bees from their hives is short stores. The preventive for this state of affairs is apparent, and yet amateurs are always asking what to do. There is no better advice, perhaps, than that given by Root in his book on bee culture, namely: After the bees have swarmed out and are put back into the hive give them a heavy comb of sealed stores if you can; if not, feed them a little at a time until they have plenty, and be sure that they have brood in the combs. If necessary give them a comb of unsealed larvæ from some other hive, and then feed them until they have a great abundance of food.

Chicken Items.

Col. Curtis, of Saratoga county, N. Y., says: Gapes are caused by a worm. A remedy is to make the chicken inhale lime dust. Sometimes it kills the worm and sometimes the chicken. Cholera is caused by diarrhea, which runs into an infection. Do not keep chickens on the same ground: remove all the well ones from the flock. If a man can realize $1.62 net profit on each hen in a flock of thirty-two, is it not more profitable to keep hens than cows at the present average price for cheese and butter, cost of keep and care of each considered?

Give cows bran, salt and fine meal. Too much dry and rich food will make ropy or stringy milk. Succulent foods will prevent this, says The Farm Journal.

James M. Thorburn says that the best means of improving meadows, pastures and lawns is to sow a sufficient variety of grass seeds, and suggests that a trial be made of the leading kinds in connection with timothy.

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ERIE, PA., AUGUST, 1891.

Frequent inquiries being received at the Department of Agriculture as to whether a serious blunder was made with reference to the mushroom plates representing respectively edible and poisonous mushrooms, in the last annual report of the Secretary, inquiries apparently based upon a published statement to the effect that the illustration of edible mushrooms had been marked poisonous, and vice versa, we assure our readers Secretary Rusk made no such mistake as has been alleged.

Something Original.

Chicago is nothing if not original; the spirit of originality goes to the extent that the methods of its merchants even partake of original ideas.

A fit illustration of this is indicated by a very handsome calendar just issued by Messrs. Lord & Thomas, of that city. This firm certainly needs no introduction to the advertising world. The original idea in this calendar, they claim, is that everybody issues a calendar the first of the year; they begin the middle of the year and make it good for a year. It is a thing of beauty and the original idea in getting it out in the middle of the year certainly makes it unique and insures it being hung by all who receive it.

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THE FRUIT GARDEN.

THE FRUIT CROP.

From Reports of State Agents.

MAINE.

The dry weather was bad for apples and caused much dropping of the fruit in some sections. The indications are that the yield of Baldwins will not be above 50 per cent. of an average crop.

NEW HAMPSHIRE.

The prospects for a good apple crop are very poor.

VERMONT

Rain is needed very much by all crops, and if deferred much longer serious injury will result.

MASSACHUSETTS.

Early grapes have been winter-killed in some places and rose bugs have created havoc in others; but care and attention have minimized the damage.

CONNECTICUT.

Apple trees look healthy, and where not materially affected by the tent caterpillar or codling moth promise a good crop. Peaches that escaped the May frost look well.

NEW YORK.

Grapes are promising much better than during the frosts of May and June.

NEW JERSEY.

Apples are falling and losing in condition, especially where not sprayed. Grapes were generally less injured by rose bugs than last year, and are more fully set. Where spraying with "Bordeaux mixture" has been neglected, black rot has made its appearance in some vineyards.

PENNSYLVANIA.

Apples have fallen off considerably more than usual and the crop will not be as large as anticipated. Grapes are improving.

MARYLAND.

Apples and peaches promise a full crop.

VIRGINIA.

Grapes in many sections suffer from rot, and a few reports complain of injury from rose bugs.

TEXAS.

Grapes are a full crop.

NORTH CAROLINA.

The fruit crop is the best for several years past.

SOUTH CAROLINA.

Fruit, except grapes, is indifferent. In the belt of the state where peaches are grown for market the crop is reported as almost a failure, but good prices have been obtained for all fruit marketed. Grapes are fine and abundant.

LOUISIANA.

Apples and peaches are doing well, and in fact all fruit is excellent.

ARKANSAS.

Early apples and peaches gave a fair yield and have been disposed of at remunerative prices. Grapes are doing well, and are comparatively free from rot or blight; the vines are well set with fruit, with berries large and bunches compact and uniform.

KENTUCKY.

Apples and peaches are a very good crop. Their condition is above the average for a series of years.

OHIO.

Apples and peaches are very scarce in some localities, but abundant in others. Grapes are scarce except in the south, west, and extreme northern part of the state, immediately bordering on the lake coast.

IOWA.

Fruit prospects are excellent. May frosts did some damage, but not enough to prevent an abundant crop.

KANSAS.

Apples are not promising as much as a month ago; falling from the trees is reported. Peaches are exceptionally fine. Grapes are good.

MISSOURI.

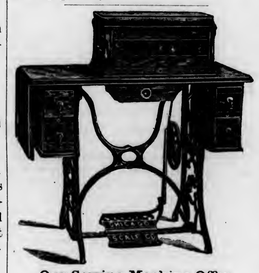
Apples are falling badly and the prospect is for a short crop. Peaches are a good crop. Grapes are rotting to some extent.

NEBRASKA.

Apples and peaches have fallen off badly, yet there will be a good crop.

CALIFORNIA.

Apples have been damaged somewhat by caterpillar and still more by the codling moth. Peaches will yield a full medium crop. Pears also. Cherries have given a full crop and brought fair prices. The reports as to the coming crop of grapes are favorable generally, but while the raisin men have passed through a prosperous one, the wine men feel despondent over the exceedingly low prices ruling for their products. When 10 cents is about the average price paid by dealers per gallon, and 400 gallons may be called an average crop; and while $20 per acre is about the usual cost of production, outside of the capital invested in cellars, casks, machinery, etc., it can easily be seen that the profits are on the wrong side. Phylloxera and Anaheim disease are decimating the vineyards very fast, and grape growers are despondent and neglect cultivation, as well replanting with resistant vines—the only effective remedy found so far against phylloxera. The outlook for the industry, once so bright, is very gloomy.



Our Sewing Machine Offer.

We have made arrangements by which our subscribers, only, can purchase one of the above sewing machines for the small sum of $18.00. This is one of the most approved styles of lock stich sewing machines, and is sold in different parts of the country at from $40 to $60. These machines are well made and handsomely finished with black walnut furniture, as shown above, and each machine contains a full set of the latest improved attachments, instruction book and the manufacturers guarantee for five years.

Subscribe for FARM AND VINEYARD.

* BEE * NOTES. *

Blood Will Tell.

This applies to strains of bees as well as to families of human beings, and they differ as greatly in characteristics.—*American Bee Journal.*

Bees' Stings.

The sting of the bee is so peculiarly constructed that if you pull it out, in stead of relieving the pain, it adds greatly to it, for instead of pulling out the poison, you push it into the flesh. Scrape the sting out immediately with a knife, and you scrape the poison also.—*Exchange.*

Forthcoming Agricultural and Horticultural Exhibitions.

Erie Chrysanthemum Club's annual show Nov. 5, 6 and 7. Besides prizes for chrysanthemums, greenhouse plants, etc., a special premium is offered by the editor of FARM AND VINEYARD for the best collection of fruits. Premiums will also be offered for the best collection of grapes and for the best collection of vegetables.

Inter-state fair, Elmira, Sept. 1 to 9. Geo. M. Robinson, secretary and general manager.

Hornellsville Farmers' Club fair, August 24 to 28, inclusive. C. K. Mason, secretary.

Cowanesque Valley fair, Westfield, Pa. Frank Stearns, secretary.

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The following are a few of the leading papers and magazines. A complete list will follow :

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The Rural New Yorker, price	$2.00	$ .50	$1.90
" American Garden, "	2.00	.50	1.90
" Farm Journal, "	.50	.50	.50
" Chicago Weekly Times "	1.00	.50	1.00
" American Rural Home "	1.00	.50	1.00
" Amer. Sheep Breeder, "	1.00	.50	.90
" Cleveland Leader, "	1.00	.50	1.00
" Yankee Blade, "	1.00	.50	1.00
" Fanciers Review, "	.35	.50	.50
" Buffalo Weekly Express "	1.00	.50	1.00
" " Sunday " "	2.00	.50	1.75
" Farmers Record, "	1.00	.50	.80
Devoted to Farmers' Organizations and Farm Topics.			
" N. Y. Weekly World, "	1.00	.50	1.00
" Cosmopolitan, "	2.40	.50	2.00
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" Western Garden, "	.50	.50	.50
Our Country Home, "	.50	.50	.50

ORCHARD AND GARDEN.

NOTES ON THE CULTURE OF FLOWERS, FRUITS AND VEGETABLES.

Our Native Fruits—The Improvements and Developments Made by Pomologists in Hardy Varieties—Raspberries, Strawberries, Gooseberries and Dewberries.

One of the most encouraging phases of pomology in this country at the present time, says Professor Goff in Garden and Forest, is the progress we are making in improving our native fruits. Within the past half century many valuable varieties of the native grape have been developed, and as the result our markets are now abundantly supplied with this

BARTELL'S DEWBERRY.

delicious fruit. The tender foreign raspberry has been supplanted by hardy native varieties, and the same may be said of the gooseberry. In the northwestern states improved varieties of the native plum are gradually coming to the front, and give promise that plums of good quality may soon be grown in our coldest states. The Crandall currant seems to be a step forward in the development of a new species that may yet prove valuable, and the dwarf juneberry and buffaloberry are beginning to receive attention. The garden blackberry, now a valuable market fruit, appears to have been entirely developed in this country, and of more recent introduction to culture is the dewberry, which, if we may judge from its best showings, gives promise of developing into one of our most delicious and productive small fruits.

Within the past few years the Lucretia and Bartell's dewberries have been rather extensively advertised in nurserymen's catalogues. But not all of the testimony from those who have tried them has been favorable, though occasional reports have been very flattering. Professor Goff considers Bartell's dewberry worthy of trial by all who are interested in testing new fruits. Mr. H. C. Adams, of Wisconsin, who is an extensive grower of blackberries, has found this variety more profitable as a market fruit than any blackberries he has grown. The accompanying illustration is made from a specimen taken after the height of the fruiting season had passed. It would not have been difficult to have found larger fruits and much larger clusters at an earlier date.

The fact that the dewberry is prostrate in its habit of growth is a decided objection to it in climates where winter protection is unnecessary. But in regions of severe winters the ease with which the plants may be covered is a partial recompense for this fault. It is said that a plantation once started is eradicated from the soil with considerable difficulty, which, if true, is an additional objection to the plant in cultivation.

Subscribe for FARM AND VINEYARD.

ORCHARD AND GARDEN.

TOPICS OF INTEREST TO AMERICAN HORTICULTURISTS.

The Elæagnus Longipes, a Handsome Plant Desirable for Ornamental Purposes and a Valuable Addition to the List of Small Fruits.

Not only is this handsome plant desirable for ornamental purposes, but according to Orchard and Garden, from which is taken the accompanying illustration, Elæagnus Longipes is also a valuable addition to the list of small fruits. It is a native of Japan, and has been grown in this country to a limited extent for some years.

It is quite hardy, says the authority quoted; grows to a height of from five to six feet, making a well branched bush of great beauty, with oblong oval leaves of light green above and silvery white beneath. The blossoms appear in May, in great profusion, small and pale yellow in

ELÆAGNUS LONGIPES.

color. The berries are ripe early in July, and are oval in shape, like an olive, and of light scarlet color. When cooked, like cranberries, they make excellent sance and pies.

There seems to be two distinct plants of Elæagnus and four names for them—longipes, edulis, Simoni and umbellatus, so that the two sorts have become rather mixed and are mostly all grown in this country under the name of E. longipes, which is the best. Mr. William Faconer describes the two species thus: "The true longipes is the dense, bushy grower, which begins to bear fruit when two years old and only two feet high; and the umbellatus (Simoni as I have heard from one source) is the vigorous willowy shrub that often attains a height of ten feet without showing the least inclination to bear fruit. Longipes is the better species by far."

Helpful Hints.

The Fruit Grower says: When red rust appears upon raspberries or blackberries the canes should at once be carefully cut away and burned.

The sulphite of iron has proven in some cases to be a fair tonic for plants with weak flower stems. Weak solutions should be given at first.

Would you have an extraordinary development of fine foliage in cannas, caladiums, castor oil beans, eulalias, reeds, ailanthus, etc? Then rely on an abundance of manure in the soil and abundant summer watering.

By spraying with a combination liquid —Paris green or London purple, or perhaps hellebore or tobacco extract in place of the arsenite—we can prevent injury from insects as well as fungous diseases.

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PICKWICK PAPERS,
BARNABY RUDGE AND CHRISTMAS STORIES,
OLIVER TWIST AND GREAT EXPECTATIONS,
THE OLD CURIOSITY SHOP AND THE UNCOMMERCIAL TRAVELER,
A TALE OF TWO CITIES, HARD TIMES AND THE MYSTERY OF EDWIN DROOD.

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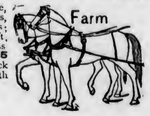
$5.00 Do not confound these with cheap machine harness. If you want such, our machine—the best in the world for the money—costs **$5.90.**

DOUBLE HARNESS, No. 92.—Farm Team Harness. 1¼ Trace, long hame Tug, over top red or black hames; Champion or D. G. buckles, hook and terret pads, fancy housings, ⅞ hip straps with trace carriers; square blind Bridles, round winker bows and checks, ⅞ Lines 20 to 22 ft, Heavy thong sewed collars, C. P. or Jap. trimmed.—The best harness made for the money. Price, **$25.00** Breeching with No. 2 will cost **$3.75** extra. No. 03.—The same as No. 92 1¼ Tugs, ¾ Bridles. Heavier stock all through Price, **$26.00.** Sent on receipt of cash, or C. O. D., with privilege of examination, when $3 is sent. Address



Libertyville Harness Co., Libertyville, Illinois.

Mention FARM AND VINEYARD.

FRUIT & FLOWERS

WINTER PEARS.

Some of the Best and Most Attractive Sorts for Market and Table.

As increased attention is being attracted in many sections to winter pears for market we here give what Mr. George Ellwanger, of Rochester, N. Y., excellent authority, has to say on the subject in Popular Gardening:

"The Anjou pear I regard as the queen of winter pears for the table. It possesses all the virtues of a perfect pear, being rich, vinous and melting, with keeping qualities not excelled by any pear of its season. It is large, of pleasing shape, fragrant, and when fully ripe of a warm straw color. Coming into market when all fall pears are gone, it may be kept from November until March. As a market fruit it is always in ready demand wherever known, and brings the highest price, five to six dollars per bushel for fine selected fruit. The tree is hardy, vigorous, not subject to blight, does not overbear, and hence requires little thinning, while few inferior fruits are seen on the tree. Anjou does well as a standard or a dwarf. It should be planted in well prepared, rich, dry ground and kept under the best cultivation, enriching it every year alternately with a moderate dressing of well decomposed stable manure and hard wood ashes. A thin sprinkling of salt during winter is also beneficial. Pruning is very important to keep up the vigor and health of dwarf trees and also to prevent overbearing.

ANJOU PEAR. SPECIMEN IN TISSUE PAPER.

"Winter Nelis is one of the finest winter pears, and a great favorite in eastern markets. The fruit is of medium size, melting and possesses a rich aromatic flavor. For a dessert pear, in respect to size, color and quality, it has no superior among winter varieties; season, December to March. Winter Nelis should be grown on pear stock, or double worked on dwarf stock. White Doyenne being the best tree for double working Josephine de Malines, when well grown and ripened, is pronounced one of the very best late winter pears; fruit medium to large, melting and of delicious rose aroma; succeeds either as standard or dwarf; season, January to April. Owing to its moderate, irregular growth it is little propagated in nurseries, and on this account is not much disseminated. Lawrence is held in high esteem as a sweet pear; fruit medium to large, melting, of pleasant flavor; season, December to January; tree a moderate grower and very productive.

"Beurre Clairgeau is the largest and most attractive early winter pear in cultivation, and always commands the highest price. The fruit is very large, pyriform, yellow and red with its red cheek usually very highly colored, nearly melting, and keeps till January, the tree being a good grower and an abundant bearer. A very valuable market pear."

Mr. Ellwanger refers to the above as the best winter market pears that have come under his observation, and says it is difficult to name any finer winter pears for the table than Beurre Clairgeau, Anjou, Winter Nelis and Josephine. The cut shows an Anjou greatly reduced in size and a specimen in tissue paper for shipping.

Dwarf Cannas.

While formerly dwarf cannas were employed for the effect of their foliage exclusively, the so called dwarf French cannas are rapidly superseding the olden types. Their dwarf habit, handsome flowers and the freedom with which they are produced are making them great favorites not only in the garden, but also for conservatory and greenhouse culture. In color the flowers are rich crimson and bright yellow, with all the variations these colors are capable of. The Florists Exchange tells that American floriculturists, however, have not been slow in improving the good work initiated by the French. By judicious crossing they have already produced some of the most beautiful as well as most dwarfed varieties in existence. The most remarkable of these is the "Star of 1891." The entire height of the plant does not exceed eighteen inches. The flowers are bright orange crimson, and so closely arranged on the spike that the general appearance is more like a cluster of rhododendron than that of old style cannas. A bed of these, conspicuously planted in a lawn, must produce a really gorgeous effect.

Valuable Spraying Mixtures.

We give Professor Maynard's formulas. The useful Bordeaux mixture is as follows: Six pounds of sulphate of copper are dissolved in two gallons of hot water, and four pounds of fresh lime are slaked in water enough to make a thin lime wash. When both are cooled, pour together mixing thoroughly and dilute to twenty two gallons. Strain before using.

Kerosene Emulsion—One pound common soap dissolved in hot water; one gallon kerosene. Stir or churn together until a smooth, butterlike substance is formed. Dilute with twenty-five to fifty parts of water.

Eau Celeste—One pound of sulphate of copper dissolved in twenty-five gallons of water.

Modified Eau Celeste—Two pounds sulphate of copper, 2½ pounds carbonate of soda and 1½ pints of ammonia (22 degs. Baume). Dilute with twenty-two gallons of water.

Paris green or London purple may be used with the Bordeaux mixture, and thus we get a combination useful both for insects and fungous diseases.

Here and There.

It is estimated that 2,500,000 barrels of apples were shipped from the United States and Canada to England last year.

Germany is credited with over 700 beet sugar factories.

Every year more farmers believe that moderate weights in pork pay best.

It has been found by experiments that the dried excrements of horses amount, on the average, to rather less than half the dry food consumed.

The managers of the Chicago World's fair had an idea of giving only medals and diplomas for farm animals, but the live stock men have converted them to the idea of offering prizes to the amount of $200,000.

ORCHARD AND GARDEN.

FRUIT GROWING AND GARDENING FOR AMATEURS AND PROFESSIONALS.

The Lawn—Plants, Climbers and Trees That Are Suited to Its Requirements. Soft Maples and Hackberrys Are Quick Growers.

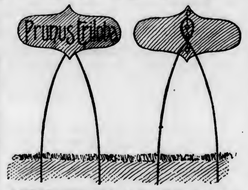
In the planting of a lawn to trees, shrubs and plants do not crowd, do not obscure, do not overdo. Any plant worth placing in a lawn is jealous of its space. All lawn plants should have heavy, rich and stately foliage, dark green rather than somber gray. They should be set in deep holes, narrow at the top, wide at the bottom, in a strong mold which will stand an abundance of water without baking. The caladium is a magnificent plant. The canna is another attractive plant. Selected varieties of the dahlia will pay, so will a colony of selected tulips, poppies, peonies, and, for screens, the new hollyhocks.

For lawn trees, the soft maple and hackberry are recommended for quick growers. For permanent shade and ornament nothing stands ahead of the sugar maple, the shagbark hickory, the burr oak, the red elm, the basswood, the white pine or the mountain pine, and the mountain ash. About or near the house, says the writer of the foregoing in Country Gentleman, I would not plant a single Scotch or Austrian pine. The black walnut is bad for caterpillars. I think that the chestnut, sycamore and willow, with the weeping beech, weeping birch and fir, will soon be counted among our reliable and popular lawn trees.

Climbers should be trained to stakes painted either white or vermilion. At Bishop Perry's place in Davenport, Ia., there is the finest plantation of roses I ever saw. The old Rhenish gardener trains his General Jacqueminots to stakes about six feet high, and prunes them in the form of an intergrowing twiggy column something over a foot in diameter.

Tree and Plant Labels.

The cross form of the labels so often seen in public parks and private ornamental grounds is open to the criticism of imparting to such resorts of pleasure and recreation a cemeterylike appearance. Mr. R. Endlicher, a German landscape gardener, uses and recommends the style of label shown in annexed cut, a reprint from Popular Gardening.



CONVENIENT TREE AND PLANT LABELS.

This label is not only simple, cheap and practical, but also pleasing to the eye, and at the same time showing the name legibly and prominently. The label part is cut or stamped out of heavy sheet zinc. The form to be adopted may be the one shown in illustration, or it may vary from this according to individual taste. The face side is given two coats of black paint, and upon this, when thoroughly dry, the name is to be written with white paint prepared from rectified varnish and white lead. Only the very best quality of each ingredient should be used. The writing may be done with a common soft pen after the point has been dulled on a grindstone, or better with a goose quill.

The use of upright Roman characters, as shown on sample label in illustration, admits of crowding the name in a very small space. After the name is put on and has become thoroughly dry, the whole surface should be given a coat of best rectified varnish. When dry, such label will be good for many years, unless injured or spoiled with malice aforethought.

For larger trees the labels may be fastened directly upon the body, at proper height. For shrubs and plants a piece of galvanized iron wire is attached to each label in the manner shown at the right hand figure of the illustration, namely, by winding it through two eyes formed by soldering two little pieces of lighter wire to the back.

Peach Orchards.

C. E. Hollister had the following to say before a meeting of the Southern Illinois Horticultural society:

Do not plant a large peach orchard without ample means and skill requisite to their best condition. The tree at best is but short lived, the crops uncertain, yet with good fruit decently handled, ready sale will be found at fair prices. Were I planting another peach orchard I would plant close, say fifteen feet, push the young trees two years after, and then let them grow slow without further cultivation till after the first crop; in the meantime keep the growth down and make the trees dwarf in their habits. If by the means of plum stocks a more dwarf habit can be secured the better.

The Strawberry Plants.

It pays well, according to Orchard and Garden, to mulch the soil along the rows of strawberry plants, for not only does the mulching keep the berries clean and free from sand, but it also retains moisture in the soil to the lasting benefit of the plants and fruit. In the family garden, where the work will not be so great as to entail much expense, the strawberry crop may be enlarged and the fruit made finer by watering. This should be done while the berries are forming and after the soil around the plants has been mulched, so that the moisture may be retained. Put on plenty of water and keep it up until the berries begin to color, then stop. During the ripening process they require warm, dry weather.

The Syringa.

The syringa or lilac, as some prefer to call it, is a favorite flower and one subject to improvement and the development of varieties. Bailey in his nursery book tells that new varieties and stocks are grown from seeds, which are usually stratified until spring. Green cuttings, handled in frames in summer, are largely used. Cuttings of mature wood will grow, also cuttings of the roots. Layers and suckers are often employed. Varieties are extensively grafted upon privet and common lilacs. Flute budding is occasionally employed. Lilacs will grow for a time when worked upon the ash. Grafting succeeds well when performed in the open air.

Horticultural Items.

The next annual session of the American Pomological society will be held at Washington.

Florida promises to become one of the best lemon growing districts in the world.

For growing celery the leading requisite is a good soil.

Mr. Barry considers the Worden grape one of the most important among recent acquisitions.

Of all the varieties of pears that have been introduced the Bartlett stands at the head of the list.

Potash fertilizers are of special value to fruit crops, and there are few superior to unleached wood ashes.

ORCHARD AND GARDEN.

HORTICULTURAL SUBJECTS CONSIDERED IN A PRACTICAL MANNER.

The Apple Orchard—Professor Bailey Tells That Carbonate of Copper Is a Sure Remedy for the Scab Fungus Which Works Such Havoc.

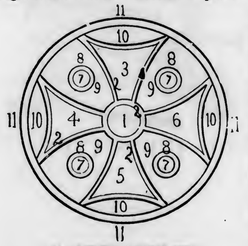
In an address on apple trees and their enemies Professor Bailey expressed the opinion that a large part of the apple failure last season was due to the unusual and early development of the scab fungus. He said: The last two seasons have demonstrated that carbonate of copper is a sure remedy for the apple scab fungus. It is not yet fully demonstrated just what are the best times to make application, but it is necessary to begin before the flowers open, and to make from four to six applications between that time and the 1st of August. Three applications at any rate should be made—one before the blossoms open, one just after they fall and another three or four weeks later.

These applications, even when a half dozen, need not cost more than fifteen to twenty-five cents for a large tree for the whole season, counting both materials and labor. A good formula is as follows: Dissolve one ounce of carbonate of copper in one quart of aqua ammonia; dilute with 100 quarts of water when ready to apply.

This scab fungus appears to be somewhat worse on low and undrained lands than upon high and warm elevations, although the latter are never by any means exempt in the infected regions. Some growers think that the scant foliaged varieties, like Spitzenburg, are most seriously injured. The growth of the wood is very scant because of the unhealthy foliage.

Carpet Beds.

The plan of carpet beds here reproduced from Popular Gardening has been carried out with fine effect. This plan is capable of wide adaptability not only as regards size, but the selection of plants.



AN ARTISTIC CARPET BED.

One simple but very pleasing arrangement might be as follows: 1. Darkest Coleus; 2, Golden Coleus; 3, 4, 5, 6 Coleus Verschaffelti (crimson); 7, Alternanthera Amœna (carmine); 8, Cerastium tomentosum (white); 9, Alternanthera paronychioides major (orange red); 10, Variegated Mesembryanthemum; 11 Echeveria secunda glauca.

Potatoes and Onions.

With many crops, says The New York World, rotation seems beneficial, independent of yearly manuring, to keep up the fertility of the soil. With some, however, it does not appear to be necessary. Potatoes and onions, especially the latter, do well on the same soil for years, provided they are properly fertilized. As both are pre-eminently hoed crops, the kind of cultivation they receive to make them profitable keeps the soil in the best possible condition for their growth. For the onion crop the ground should be exceedingly mellow and rich. Barn yard and hog pen manure are both excellent for this crop, provided they are well decomposed and thoroughly mixed with the soil. No crop will pay better for an uncommonly good preparation of the soil than this. A yearly top dressing of ashes applied to the onion beds and raked in before the planting is highly recommended.

For the potato the ground should be deeply plowed and well harrowed to pulverize it. The furrows for the seed bed should be deep and wide, to give the tubers room to form without obstruction from the firmer soil of their sides. For this crop the standard commercial fertilizers have given the best returns, and are now more commonly used than for any other. They may be sown broadcast or more directly applied. For their most economical use they may either be mixed with the loose soil in the bottom of the furrow before the seed is dropped, or be scattered on top of a first shallow covering, leaving the furrow to be filled when the shoots begin to appear. It is not quite settled whether above or below the seed is the best.

The Medlar.

The medlar, a native of Europe, has been grown for many years in the southern Atlantic states, and to some extent in California. It is, however, classed as a second grade fruit and has never attracted any special attention. The fruit, which is of a dark brown color when ripe, varies from an inch to an inch and a half in diameter, and somewhat resembles the persimmon in shape. Like the sapodilla it is not good to eat until the first stages of decay have softened the pulp. It has then a rich, sub acid flavor. The tree, says California Fruit Grower, is small but handsome, and is frequently used for making hedges.

An Item in Melon Culture.

A Georgia farmer says that a very important point in the growing of watermelons is the manuring. Many patches are ruined by too much manure in the hill immediately at the root. Strew manure heavily along the furrow, opened wide and deep, ridge on it, then strew in ridging furrows. Too much manure at root will make vines turn yellow at first little dry spell, and the melons will ripen prematurely, and, of course, you will have a melon that is sickly, but a melon fresh from a healthy vine is a harmless luxury, unsurpassed by anything in the vegetable or fruit kingdom, provided you have a good kind.

Money in a Vineyard.

G. J. Carpenter, in a paper on grapes, showed that his vineyard had almost paid for itself in the first three years, and that in the years following the products were nearly clear gain. He recommends the Brighton, Goethe, Worden, Agawam, Concord and Elvira for a large vineyard.

Worth Knowing.

Remember that the watermelon requires more space than does the muskmelon.

Phlox drummondi varieties as a rule come true to name when raised from seed.

Mr. E. W. Wood names the Pocklington, Hayes and Niagara as among the most desirable white grapes for market.

Don't kill the toads; they are too valuable as insect destroyers.

Red Jacket is the name given to a new variety of gooseberry.

There are two new strawberries that The Rural New Yorker recommends for trial; one is Michel's Early and the other Lovett's Early.

GRAPE VINES
NIAGARA All old and new varieties. Extra Quality. Warranted true. Lowest rates. Introducers of the EATON
Also other SMALL FRUITS. New Descriptive Catalogue Free. T. S. HUBBARD CO., FREDONIA, N.Y.
Mention FARM AND VINEYARD.

THE SUPERIOR
STAMPING OUTFIT.

Contains over 100 Patterns, including Alphabet of Capitals and Small Letters. A Special Feature of this Outfit is **Copyrighted Embroidery Designing Patterns.** With these Designing Patterns any one can arrange flowers in clusters of any size or assortment to suit the fancy, or they can be so shaped as to fit any piece of material which is to be stamped. We do not offer this outfit for the large number of patterns it contains, but for their usefulness. Each being a design of best workmanship, perforated on best Government Bond, with ample working space. There are Designs for Scarf Ends, Ornamental Border and Corner Designs for Tray Cloths and Carver's Cloths, Sideboard Scarf, both Corner and Border. New Designs for Tinsel Work. Flannel Skirt, Running Embroidery, etc. Designs for Doilies, Bed Spreads, Tidies, Banners, Pillow Shams, and a Splasher Pattern 8 x 22 inches. **These Patterns are for all kinds of Embroidery and Painting.**

DESCRIPTION OF A FEW OF THE PATTERNS In addition to the designing set. These patterns are all perfect and each one complete in itself. **Splasher design,** 8x22 inches, 50c. **Splash! Splash! Owl, with Umbrella,** 6x9, for tidy. Handsome Outline Design for tidy, 5x7. **Star and Anchor,** for sailor blouse. **Lawn Tennis Racket. COMPLETE SET OF CAPITAL LETTERS. Alphabet of Small Letters,** to go with the above. 1 set Large Numbers; 1 set Small ditto. **Beautiful Tinsel Design, 6 in. wide,** for Lambrequins, etc. **Narrow Braiding Pattern,** ⅛, 1-2 in., with corner turned. Several **Flannel Skirt Patterns,** wide and narrow. **Good Night and Morning,** for pillow shams. **Stars, Crescents, Disks,** etc., of different sizes, for tinsel or art thread, etc. **Tea Pot, Creamer, Sugar Bowl,** and **Cup and Saucer,** for tray cloths, etc. **Large Spray of Roses and Buds, 6x12,** for end of table scarf or any other purpose. Large bunch of Daisies, to match Roses in size. Beautiful spray of Poppies, 5x9. Spray of Lilies to match. **Sickel and Spray of Wheat.** Several Running Vines. Small designs for **Crazy Patchwork,** etc. Birds, Figures, Fruit, Pinks, Buttercups, Chicken, etc., etc. Large bunch of Pond Lilies. Sprays of Fuchsias, Primroses, Roses, Ox-Eye Daisies, Barberries, Clover, Grasses, Golden Rod, Sumac, etc., etc.

This is a regular Dollar Outfit, and other publishers sell it at that price. **Our price is only 50 CENTS.**

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SPRAY YOUR TREES. $17 Spraying Outfit Express Paid, for $5.50.
Outfit Combines 3 Complete Brass Machines. Will thoroughly SPRAY A 10-ACRE Orchard per day.
A valuable Illustrated Book (worth $5) on "*Our Insect Foes,*" *given to each purchaser.* My agents are making from $5 to $20 per day. GOODS GUARANTEED AS REPRESENTED OR MONEY REFUNDED. Don't buy a spraying outfit until you receive my illustrated circulars, price list, and other valuable matter on spraying fruit trees and vines. *Write at once and mention this paper.*
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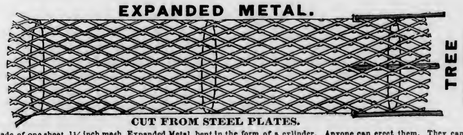

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Tells all about **Kalsomining** and **Paper-Hanging.** Anybody can learn how to do it. Also, how to **Polish** a **Piano** or **Organ,** or **Varnish** and **Renovate Furniture.** In short, this book will tell you **all about Painting.** It is filled with illustrations. It will save any family **ten times** its cost every year. This is the time of year when everybody begins to think about **"Fixing Up,"** and this book will help you do it.
A copy bound in **extra cloth,** with ink side-stamp, will be sent, postage prepaid, on receipt of **One Dollar.** Address
FARM AND VINEYARD PUBLISHING CO.,
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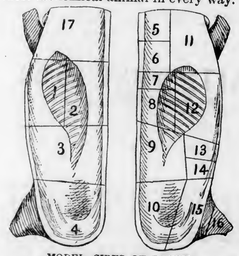
FARM AND GARDEN.

EXPERIENCES AND OBSERVATIONS IN LIFE ON THE FARM.

The Leading Points of a Perfect Pig—Diagram with Accompanying Figure of Model Sides of Bacon—Suggestions for Breeders and Consumers of Pork.

Following are points of a perfect pig: 1. Neat in the head. 2. Light in the neck and shoulders. 3. Deep in the heart and around the ribs. 4. Thick in the loin. 5. Stout in the thighs. 6. Short in the legs. 7. Long silky hair. This type of animal should be aimed at, whether thoroughbred or halfbred or common bred pigs are kept. Large boned, coarse sows are almost invariably deficient in suckling properties and motherly instincts generally, and from their unwieldiness they frequently overlay and crush their young. As size almost always comes from the dam, it is very important that this factor should receive due consideration, and when this size is supported by only just the requisite amount of bone we have of necessity the most economical animal in every way.



MODEL SIDES OF BACON.

1. Streaky quarter. 2. Rib quarter. 3. Middle quarter. 4. Ham quarter. 5. End of neck. 6. Middle of neck. 7. Thick back and sides. 8. Prime back and ribs. 9. Loin. 10. Fillet. 11. Shoulder. 12. Prime streaky. 13. Thin streaky. 14. Flank. 15. Middle of gammon. 16. Knuckle of gammon. 17. Fore end.

If carefully studied in connection with the figures underneath it the accompanying diagram will explain more clearly than words the desirability of having certain parts of the hog improved and increased in weight, while the less available parts may be correspondingly reduced, and this without detriment to the constitution or fecundity of the animal. For instance, readers will know that the fore end, marked No. 17, is the lowest priced part of the side of bacon. It is therefore desirable to reduce in weight as much as possible. On the other hand the piece No. 9, the loin, is high priced, and it is important that the weight of this be increased.

It is desired to emphasize what was designated in the beginning as point three, "deep in the heart and around the ribs." Looking at this from the consumer's point of view, a pig which is deep in the heart and around the ribs will of necessity produce a larger quantity of first class bacon, viz., prime back and ribs, prime streaky. This is one of the most valuable parts of the animal, and it is therefore desirable to add as much as possible to its weight. From a breeder's standpoint the pig that is deep in the heart and round or well sprung in the ribs will certainly be a good feeder, because he has plenty of room for his stomach, liver, heart and all the main organs. A pig that is long in the legs is nearly always flat in the ham and lacking in plumpness. Good hair is an indication of strength of constitution as well as lean meat.

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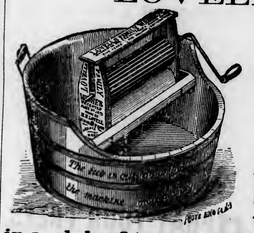
LOVELL FAMILY WASHER.

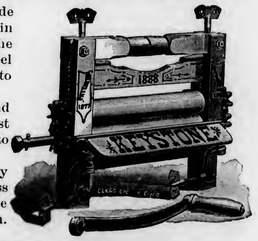


We will guarantee the "Lovell" Washer to do better work and do it easier and in less time than any other machine in the world. Warranted five years, and if it don't wash clothes clean, without rubbing, we will refund the money.

We have made special arrangements by which we can supply a limited number of these Washers for $2.00, including a year's subscription to Farm and Vineyard, or we will give the Washer free to anyone sending in a club of ten subscribers at our regular clubbing rates, 25 cents each, but we cannot pay freightage.

We will sell this Wringer for **$3.00**, *including a year's subscription to the Farm and Vineyard.*

Celebrated Keystone Wringer, No. 10.

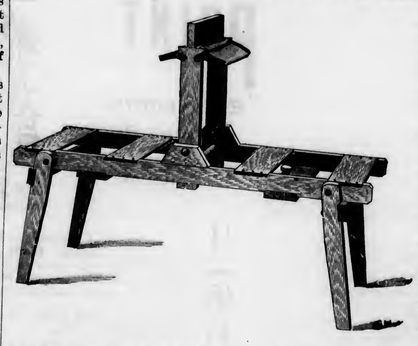


We desire to call your attention to this new Wringer. The frame is made of the best Hard Maple, and the Rolls are of solid White Rubber, fastened in the most secure manner to the shafts. The pressure is secured by the use of the Steel Spiral Spring, especial care being taken to procure the best Spring Steel for this purpose. The side pieces are bolted together in such a manner as to prevent the possibility of spreading or splitting.

The Clamps used in the "No. 6," are made entirely of Malleable Iron, and are of such form and construction as will secure the Wringer to the tub most effectually, and are attached in such a manner as to make them adjustable to any sized tub, round or square.

The essential features of this Wringer are strength, durability and easy working. It has been subjected to the most severe tests, and is found to possess the great merit of being a "dry Wringer," and remarkably easy to operate. We do not hesitate to recommend it as a machine that will give entire satisfaction.

FOLDING DOUBLE WASH BENCH.



The engraving represents the most complete artices of the kind ever offered to the public. Made of all hard wood, nicely finished. The upright piece is so constructed that any kind of a Wringer can be fastened to it. By pressing lightly on a button with the left hand the standards bearing the Wringer may be easily let down with the right to a level with the top of the bench. The legs may then be folded under, thus forming a snug and compact package, occupying but little space when not in use, and being in the most desirable shape for transportation. It is provided with a double water-board, so that the Wringer may be used from either side. This is an article that fills a long-felt want and will be greatly appreciated by all housekeepers. The price is but a small item when the real convenience of such an article taken into consideration. Why continue to use a rickety chair or clumsy box, when this substantial and convenient bench is at your command for a mere nominal price. Here your Wringer is always out of the way and just where you want to use it, Every woman knows that nothing injures her tub so much as the straining of the Wringer attached to it. One of these Benches will last twenty years. Don't you think you would save its cost a good many times over in that time? Our agents will find it a most desirable article to handle in connection with the Washers and Wringers.

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LANDSCAPE GARDENING.

A Wall Which Is a Picturesque Combination of Shrubs, Trees and Flowers.

The circular wall of shrubbery and trees depicted in the cut is a facsimile of what one meets on entering the grounds of one of the notable Newport summer residences. This wall is bordered by bulbous plants and showy annuals, and affords a pleasing instance of a system of planting that produces arboricultural and floral effects.

CIRCULAR WALL OF SHRUBBERY AND TREES.

American Garden, from which the cut is reproduced, describes the group as containing some well formed specimens of conifers, mostly spruces, behind which is a collection of deciduous trees extending nearly to the house. In front of the evergreens, and facing the street, may be seen a showy collection of annuals especially adapted to the situation. The carriageway, which extends entirely around this group, is bordered, first, by a line mostly of lobelias and pansies; then come geraniums, marigolds, scabiosas, chrysanthemums, etc., of various forms and colors. The larger flowers shown are specimens of the golden banded lily, L. auratum, and the white lily, L. candidum. These rise above those in front and blend beautifully with the wall of green against which they are banked. The collection is so arranged that the border is never dull, while the constant succession of flowers affords a freshness to the picture, whenever viewed, from spring to autumn.

Apple Trees Among the Flowers.

An English pomologist suggests the use of well trained apple trees as ornamental growths. He says: "Placed here and there in large, wide borders filled with hardy perennials they present an attractive appearance, not only when in flower, but later on, when they produce their fruits. I cannot see why we plant Weigela roses in our gardens and shut out apple trees. The flowers of the Weigela closely resemble apple blossoms; they are not any prettier, but no fruit comes afterward. The fact that the apple is deciduous is rather in its favor, as at a time when the tree has no attractions in itself it can be surrounded by bulbs, which will succeed all the better because there are no evergreen leaves in the way."

The crab apples are both ornamental and useful, and may justly claim a place in ornamental gardening. The single and double flowering varieties from China and Japan are splendid in flower.

FARM AND GARDEN.

OBSERVATIONS WORTHY OF CONSIDERATION IN RURAL AFFAIRS.

A Poultry House That Consists of a Two Story Upright and Two Wings Built by an Enthusiastic Poultryman of New York State.

The accompanying cut represents a southeastern view of the main building of Mr. Willis Clark's poultry yards, Wyandotte, N. Y. This building furnishes the winter quarters, which consist of a two story upright and two wings—total length, 80 feet; upright, 16 by 20 feet; wings, each 12 by 32 feet; on stone foundation, boarded with rough boards first, then covered with tarred paper, and again with inch pine siding (matched), the whole being tastily painted, and costing about $600. The building stands on a tableland facing square south.

The building is divided into ten pens, each 8 by 9¼ feet, separated by wire netting attached to baseboards 2 feet high. The feed is kept in the front portion of the upright, and is fed on the floor of the alley (2¾ by 80 feet), water being also set in the alley, thus preventing its overturn or waste of food by trampling. The fowls feed through spaces between ⅜-inch iron rods, set 3 inches apart, about 18 inches high, above which wire netting completes the division between the pens and alley to the roof.

POULTRY HOUSE WITH WINGS.

Mr. Clark claims no originality in the construction of the nests or other furniture, except that to circumvent "egg eaters" he sometimes closes his nests and compels the culprits to lay in nail kegs, at about one-third of the distance from the bottom of which he builds the nests. This has proven effectual when all other means have failed. All furniture is portable, and can be carried through the door leading to the alley, taken out doors and cleansed by scalding, whitewashing or painting with crude petroleum, which he obtains from oil wells only six miles away at a nominal price. The second story of upright is used as a storeroom for coops, feed, road dust, etc., through the winter, and for hatching purposes in the spring, for which he always trusts to "mother hen," with all her faults, his ro[illegible]n, 16 by 20, easily accommodating fifty sitters. The foregoing cut and description are reproduced for our readers from The American Poultry Yard.

Applying Commercial Fertilizers.

A correspondent of The New York World writes: My plan in the garden, especially with all small crops like lettuce, onions and this class, is to prepare the soil in good tilth ready for the seed and then scatter the fertilizer broadcast as evenly as is possible. Then even the surface with a good steel rake; work the fertilizer well into the soil. With all this class of plants the fertilizer needs to be near the surface in order to benefit them. With cabbage, tomatoes and all the class of larger vegetable plants make the place for the plants, using a dibble or garden trowel. Put in the fertilizer and stir it in well with the soil and then set in the plants. With sweet corn, potatoes and this class of plants prepare the soil and mark out the furrows ready for the seed. Drop the fertilizer where the seed is to be planted, stir into the soil, then plant and cover the seed. Generally this will be found better, especially with potatoes, than to wait until the plants come up and then apply commercial fertilizers.

A Few Sheep Wrinkles.

Northwest Stockman discourses as follows: Old, broken mouthed ewes are dear at any price. If they cannot be sold to the butcher feed them to the crows in the fall—they will get them anyhow before "the voice of the turtle is heard in the land."

All sheep are subject to both internal and external parasites. Feed them occasionally a little hardwood ashes or finely pulverized tobacco, which will free them from worms and improve their general health. Dip them thoroughly in some approved sheep dip, and there is nothing better than a preparation of tobacco.

Do not overstock; better keep too few rather than too many. If a flock of 100 sheep could be made as profitable as a flock of ten, shepherds would be clothed in purple and fine linen. Mix a little sulphur with their salt; it enriches the blood and disagrees with ticks and other parasites.

Champion Short Horn Heifer.

The portrait here presented of the short horn heifer belonging to Queen Victoria can hardly fail to interest the admirers of this breed of cattle, inasmuch as said heifer is a perfect specimen. Her evenness of form, thickness of flesh and general fine appearance leave little, if anything, to be desired.

THE QUEEN'S CHAMPION HEIFER.

Princess Josephine II, the heifer under consideration, is a roan, aged about two and three-quarter years. She took the championships of both the Birmingham and Smithfield shows.

Bee Gleanings.

At a recent meeting at St. Catherine's, Ont., a vote was taken on the question of outdoor versus indoor wintering of bees. The majority favored packing on summer stands.

Mr. Thomas G. Newman urges on the readers of The American Bee Journal the importance of their making bee and honey exhibits at the agricultural fairs, and gives some very good reasons for so doing. There is no doubt about the attractiveness to the average fair goer of bees in glassed hives and honey in glass crates.

If separators are to be used, which shall they be, wood or tin? I believe the general decision is that tin is preferable with wide frames, and wood with the T supers, says a correspondent in The Beekeepers' Review.

"Ripe" honey is honey which has by evaporation become sufficiently thick to be sealed in the cell.

The queen cells are elongated and are the ones in which queens are reared.

Root tells that the slatted honey board is now scarcely ordered, and he has almost ceased making them. Fixed distances and thick top bars are running it out entirely. Of course queen excluding honey boards are as popular as ever.

A tested queen is one whose progeny has been examined and found pure.

A separator is a strip or piece of tin or wood placed between section boxes to insure straight combs.

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ORCHARD AND GARDEN.

USEFUL AND ORNAMENTAL GARDENING FOR COUNTRY HOMES.

Strawberries—A Brief Description of Some of the More Promising of the Newer Varieties—Each Kind Has Some Advantages.

Numbered with the more promising of the newer strawberries is the Lady Rusk, a pistillate variety. It is claimed to be "several days earlier than the Crescent, large and holding its size throughout the entire picking. It withstands heat and drought, is a very vigorous grower and immensely productive."

LADY RUSK STRAWBERRY.

Daisy, also a pistillate, is a seedling of Crescent fertilized with Cumberland. Berries uniformly large; nearly globular; pale scarlet; flesh medium firm; quality very good; season medium. The plant is a good grower, standing well under a hot sun.

Haverland, another pistillate sort, is large and elongated—conical in shape. It is moderately firm and of fair quality. The big claim made for this berry is that it is exceedingly productive. For size and productiveness, with many growers, Buhach No. 5 stands in the front rank, and leaves nothing to be desired for home use, but for marketing it lacks the necessary firmness. Its season is medium to late. Jessie, though not a new berry, is not as widely known as it ought to be. The berries are large and showy, of good quality, and the plants are vigorous, healthy and productive. Parker Earle is another berry worthy of culture. It is a seedling of the Crescent, fertilized by pollen of a seedling of Miner's Prolific.

Standard Roses on Lawns.

The standard roses will bear a good deal of exposure and thrive well provided they have been properly set out. Many roses are ruined from deep planting. A stalk should be placed to each rose and the stem firmly tied to it just below the point where it was budded. In replacing the turf a circle two feet or so in diameter should be left round the stem of each tree.

The piling up of soil on these circles is a prolific source of injury to the plants, as it places the roots too deep below the surface, which is a mistake. It is a common practice to plant a few bedding subjects in these circles, but they should be those that do not root too deeply. It would be best to keep the circle sacred to the rose, and mulch with manure two or three times during the summer and especially during dry weather. Liquid manure can be given occasionally with great advantage.

Grapevines on Heavy Soils.

The old idea that grapes thrive best on light land is mainly due to the fact that such soils are naturally dry. While a heavy clay is not best for the grape it is no insuperable obstacle to success in vineyarding, provided it is thoroughly underdrained. In fact, grape growing is possible under a wider range of conditions and soil than is the case with any other crop. The one thing that grape roots cannot abide is stagnant water. No matter if this dries out in midsummer. It is then past the power of the vine to regain lost time. Land thoroughly drained to the depth of three feet warms more quickly in the spring, and makes a difference in temperature of 5 to 10 degs. or more at the time when the vine most needs warmth, says Green's Fruit Grower.

Desirable Currants.

At a Massachusetts farmers' meeting, from among the many varieties of currants, the Versaillaise, Fay's seeding and Victoria of the red, and Dana's transparent or French transparant for the white, were selected as most desirable for general cultivation. The cherry and Versaillaise are both of French origin and are reported by the Royal Horticultural society to be one and the same. The fruit of the Victoria is smaller, but the bushes bear profusely, and being later than the other varieties, it is a desirable sort with which to lengthen the season.

Shading Young Trees.

A nurseryman who has seldom had occasion to replace a tree that has died says that his success is the result of a very simple but seldom failing precaution. When the tree is planted a piece of wood not less than three inches wide and high enough to reach the lowest branches should be driven into the ground just south of the tree. This keeps the sun off it during two-thirds of the day, and prevents the sap and bark being burned up before new roots have been formed. Any one adopting this plan will be certain to have success with his trees, no matter how poorly they look when first planted out.

For Outdoor Roses.

Joseph Harris says: For outdoor roses in permanent beds my experience leads me to think that it is desirable to get the subsoil rich in nitrates. I have used nitrate of soda for several years, and the longer I use it on a bed of roses the more vigorous are the plants, and the more luxuriant and glossy are the leaves. I give them a heavy dressing every spring, and I presume the subsoil is rich in nitrates, and that the roots follow the food.

Things That Are Told.

A gardener who has tested it for three years tells in The Home Journal that broken pieces of bone do much better than broken crockery for draining flowerpots. The plants suck the fertilizing quality out of the bones and make such a vigorous growth that the plants in pots supplied with bones could be told at once.

John Thrope, a good authority, calls the rose Clothilde Soupert one of the most valuable introductions of many years. "It is perfect as a plant pot for market and surpasses the Hermosa as a bedding rose."

Over-sulphuring injures the texture and flavor of the fruit, as any unbiassed dried-fruit-testing palate will testify.

Gladiolus bulbs may be planted from now on until July.

A company has been formed to test growing Niagara grapes in Florida.

Large shipments of oranges have been made from California to Boston this year.

It is claimed that with proper cultivation and an equal acreage Texas would exceed California in the production of superior fruits.

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and take no other. Nearly every grocer from Maine to Mexico keeps it in stock. If yours hasn't it, he will order from his nearest wholesale grocer.

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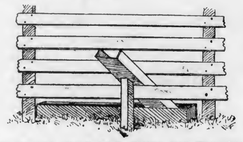
FARM AND GARDEN.

OBSERVATIONS WORTHY OF NOTE IN RURAL AFFAIRS.

Timely Hints Concerning the Treatment of Breeding Swine and the Young Pigs. A Simple Arrangement for a Trough That Is Frequently Neglected.

One man hangs over the fence and pours part of the slops in the trough and part on the backs of the pushing, squealing pigs. Another man pours the slop in a trough which he has passed through the fence. It is easy to tell which is the wiser. The cut shows how the wise man has the trough fixed.



HOW THE WISE MAN FIXES HIS TROUGH.

The following pertinent advice is given in Farm Journal, authority for the foregoing:

Plant out a big lot of early sweet corn to feed the pigs this summer. Look out for the seed now. Where the most is said and done for pigs there the pigs pay the best. The more you think of your pigs the more they will think of you. Begin now to feed the brood sow, so she will not be crazy when the little pigs are born. Give her plenty of bran and succulent food. Let her have a run out of doors.

Don't make a practice of breeding young and miniature sows if you want strong and healthy pigs. Don't feed breeding sows corn, and so make them fat; if you do, ten chances to one they will kill their pigs. Don't go to the other extreme and half starve them; but give laxative food, such as roots, bran or linseed meal. Don't let the brood sow run with shoats or other store hogs, and at least put each sow by herself, in the place where she is to have her litter, a week or ten days before she is to farrow. It will pay you well after weaning to feed the little pigs three times a day on warm food, feeding no more than they will eat up clean. Give them a few oats to eat between meals.

See how much pork product can be sold in a manufactured state and so get double the price for it—sausage, head cheese, spare ribs, bacon, hams and shoulders and lard. These are the names by which to sell the pigs. They sound better than simply pork. Put them in the best possible shape and sell by sample, taking orders and then delivering afterward.

Pigs' Teeth.

A pig's age may be known by its teeth, as well as the age of other animals. Its mode of dentition is as follows: It is born with four front teeth; one month afterward it gets four more, one in each side of the first pair in each jaw. At 3 months it has four more, which is all the front temporary teeth it has. At 9 months the four outside teeth drop out, and are replaced by permanent incisors, and the others are replaced during the next year. At 3 years the boar's tusks appear; at 4 they begin to lift the lips; at 5 they are seen outside the lips; at 6 they project from the mouth, and after that they grow longer. After 2 years the sow's front teeth have a black ring around the base of them, and as the age increases the color of the teeth deepens and they become worn. As pigs, however, are rarely kept over two years, this test gauge is not often required. Of recent years, since pigs have been bred so as to mature more rapidly, the teeth may indicate, as with sheep and cattle, more age than the animals really have. A well bred pig may have all its permanent front teeth at 18 months, and this more rapid dentition has sometimes led to disputes as to the pig's age.—Mark Lane Express.

Hay for Horses.

Professor Henry is credited with saying that ten pounds of hay is sufficient for a horse liberally fed on grain. As a rule horses consume much more hay than is best for them or profitable for the owner. The practice of filling a hay chute or deep manger with a large amount of hay and allowing the animal to eat at will should be avoided. With a little experience ascertain the real needs of the animal, and keep him to that.

How to Grow Big Corn Crops.

An Indiana farmer, writing in The Farmers' Review, tells how he has gained his prize crops. He says:

The acre of corn with which I competed for a premium in 1889, and on which I had drilled 500 pounds of phosphate, was planted three feet and two feet alternately in width, with one stalk every twelve inches in the row, and yielded me 115 bushels. The same acre was planted again last year with rows six feet and three feet alternately, with stalks twelve inches in row, and yielded 100 bushels of corn of a far superior quality to the year before. No fertilizer was used this time and the season was not quite so good as the year before.

I concluded, therefore, that I made a mistake in planting my corn too close together. Two one-fourth acre plats were selected in which I have not been able to detect any difference in quality of soil, one plat planted as above, six feet and three feet, and the other all the rows three feet in width. The grains were dropped in each case twelve inches in the row, cultivation the same. Result: The first named produced twenty-two bushels good corn. The second, with one-third more corn planted, produced sixteen bushels good corn and eight bushels light chaffy corn, equal in feeding value to eighteen bushels good corn.

I do not believe we can have any iron-clad rule to plant by. Some ground will stand closer planting than other. I also believe corn can stand closer planting in Michigan or Wisconsin than it can in southern Indiana or Kentucky.

Sprinkling Eggs.

Sprinkling eggs is one of the "exploded ideas" of artificial incubation. It is dangerous and useless, lowering the temperature too suddenly, increasing evaporation and supplying no moisture to the chicken. Put a pan of warm water or a wet sponge or a cloth beneath the egg drawer, if you think moisture is lacking. At any rate don't sprinkle the eggs, says The Fancier's Journal.

BREEDERS' CARDS.

Under this heading cards will be inserted at the following very low rates: 50 cents per line for six months; 50 cents per line for a whole year. Single insertions 8 cents per line.

Express Pre-Paid
— ON EGGS FROM —
Thoroughbred Light Brahmas, White and Barred Plymouth Rocks, Wyandottes, and White and Black Minorcas, at $2.00 per 13; $3.00 per 26. Send for Circular **JOE CRAVES,** Agent American Express, BLACK RIVER, N. Y.
Mention FARM AND VINEYARD.

River Herd
M. D. YODER,
Middlebury, Indiana.
Breeder and shipper of Large English Berkshire Swine. My herd is headed by Jumbo, 19353. He would weigh, when fattened, 800 pounds. Satisfaction guaranteed. Write for what you want.
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Breeder, Shipper and Dealer in Chester White, Berkshire and Poland China Pigs, Fine Setter Dogs, Collies, Fox Hounds and Beagles, Sheep & Poultry. GEO. B. HICKMAN, West Chester, Pa. Send stamp for Circular.
Mention FARM AND VINEYARD.

SEND 6c in stamps to OHIO POULTRY JOURNAL. Dayton, O., for sample copy.
Mention FARM AND VINEYARD.

$20 PHOSPHATE FOR WHEAT.
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Runs with less wind, and is the neatest appearing wind mill made.
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We will send FARM AND VINEYARD in combination with any paper or magazine in the U. S. at the price of the paper you want, thus giving you two for the price of one.
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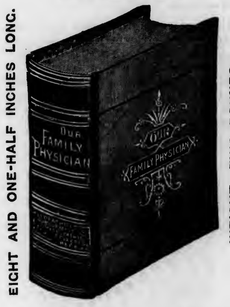

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TWO INCHES THICK. 480 PAGES.

It sells in all book stores for **Three Dollars!** 50,000 copies have been sold in the last six months! It is printed on extra heavy paper and is handsomely bound in cloth, with embossed covers and gilt-lettered back.

It is different from all other works of this kind ever published, and the difference is such that it makes it more valuable than any or all of them.

This is shown by the following points in which it stands alone and without equal.

FIRST. It teaches those who have it how to tell what the matter is when a person gets sick!

All similar books tell what to do **if you know what the disease is.** This book tells you **how to detect the disease,** and then what to do for it.

No other book published does this.

SECOND. When a person is really attacked by a dangerous disease, it enables you to know the fact, and in such cases its advice is: "Send for a competent physician at once." But in all ordinary cases, such as can be easily cured (and most of the ailments in a family are of this kind, if only you could recognize them) it gives full directions for treatment. The point is, that it teaches you to distinguish between **a dangerous** and **a trifling** disease, and tells you when it is necessary, and when not necessary, to call a physician.

No other book published does this!

THIRD. In its directions for treatment it is not confined to the practice used by any **one** class of physicians; but it gives, **separately,** and for each disease, the methods used by each of the different "schools" of medicine; and in all cases the prescriptions are made by the most eminent men in their respective modes of practice. This makes the work especially suited to the needs of every family, no matter what "school" of medicine they prefer.

No other book published does this!

Besides this, there are three chapters in the work which are worthy of special mention, namely, those on "Diseases of Women," "Diseases of Infants" and "Care of the Sick."

The first of these is a model of its kind. It is chaste in language, contains no disgusting pictures for children to happen on and be over curious about, and taken altogether is the most practical, sensible and straight-forward treatise upon this delicate subject that has ever been printed.

This chapter alone is worth many times the cost of the book to every mother, even if it had been purchased at its regular price.

The other chapters referred to are equally well written and valuable.

But we need not further enlarge on the merits of the book. We have said enough to substantiate our claims that it is different from all similar books, and to show that is well worth having. By special arrangements with the publishers we are enabled to send this **book** by mail or express prepaid for only **$1.25.**

With every order we will include a years subscription to this Paper.

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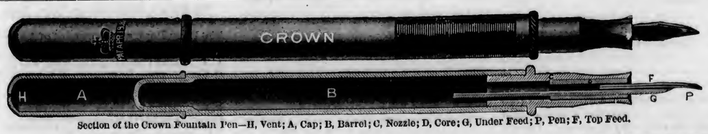

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Farm & Vineyard

And American Gardener's Assistant.

VOL. 5. NO. 5. ERIE, PA., SEPTEMBER, 1891. FIFTY CENTS A YEAR.

Preserving Vegetables.

BY JAMES I. BAIRD.

For the FARM AND VINEYARD.

The season for storing away the various root crops is at hand. With regard to preserving many of these crops some difficulty is experienced. What is required by most, if not all of them, is dryness and uniform temperature, and that above the freezing point. A frost proof house built for this purpose is, in the main, the most economical method. Cellars are much employed for this purpose, and are convenient and unobjectionable if made under some outbuilding, such as beneath a room in the barn, for instance, for in such case, the health of the family is not likely to be undermined by poisonous emanations arising from decayed vegetables put in cellars made beneath the dwelling. However, these can be so well constructed, and with light and ventilation, as to obviate, in a great measure, this evil.

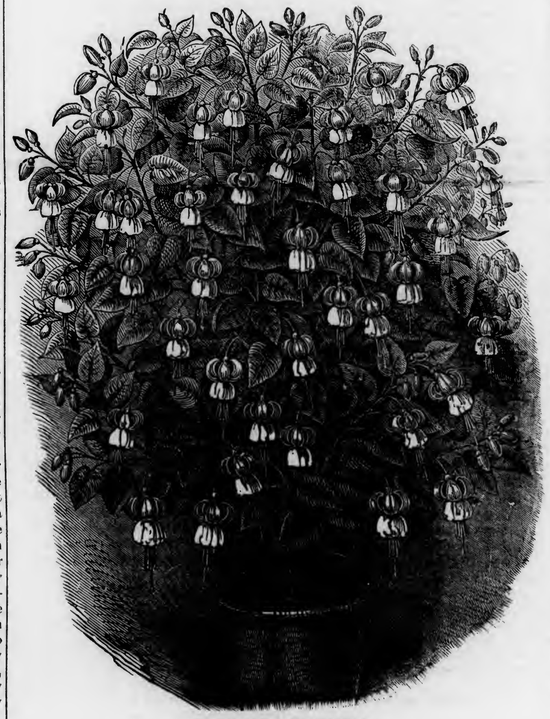
Where there are such things as hillsides on the farm, a storehouse can easily be made in some convenient hillside—a south hillside it should be. Within such excavation build a wall a few feet high, with split logs or other suitable material, as desired, a strong roof being put over it, not flat but in an A shape; cover this with straw or hay, then with the dirt taken from the excavation. Just beneath the apex, at the southern end, should be left a small aperture for ventilation. The floor should have a slight inclination from the hill outward to insure proper drainage. In this way and at very little labor or expense, can be constructed a good and durable storage room. The size of the storage room should depend on the size of crops to be stored therein. In such a repository roots, apples, potatoes, and in a word, all kinds of vegetables can be readily stored and for the most part safely kept.

Many store their crops in pits in the field where the crops grew. Most root crops can be securely put up in this way. The pits should be put upon elevated ground so that water may not stand about them. Where there are such elevations trenches are opened with spade or plow, the roots, dry and clean, are heaped up in these even five or six feet wide at the base and as much as four high. Dry straw or anything of similar nature is put over the heap sevearl inches thick, and, indeed, a layer of such under the heap would be all the better; then cover with dirt, leaving an aperture at top to give vent to matter arising from the usual fermentation and heating, during which considerable moisture escapes. Then before severe weather sets in cover sufficiently deep to secure against freezing.

The roots should be ripe, sound and dry when stored, otherwise decomposition begins in places and quickly spreads through the mass. When large quantities are heaped together, it would be better to put in at various places, when storing, barrels with holes cut in the sides, or bundles of small sticks, or fine brush is better. These will give easy escapement to moisture and heat, and they should project somewhat above the earth covering and thus form a ventilator. Then cap the projecting ends with a good bundle of straw to exclude the rain and snow. Crops put up thus seldom fail to do well.

With regard to keeping sweet potatoes, we hardly hope to advance anything that will be any improvement on old methods, so difficult is it to preserve these desirable tubers. We have put them up in various ways, and have found none of uniform efficacy, but have found the method given below to give the best results, especially if the potatoes are in proper condition when stored.

There should be the frost proof storehouse here recommended, or cellar, then much of the difficulty is obviated in keeping sweet potatoes. A uniform temperature, dryness and ventilation are absolute requisites, which, in such a storehouse, are pretty well preserved, and if the potatoes are stored away in well-ventilated bulks, or better, spread out not more than a foot deep on the floor or shelves one above another to economize room, they will seldom fail to keep well. Care must be taken to so ventilate the apartment that it will not become too close and warm, as warmth will ruin the potatoes as surely as cold or moisture.



SPECIMEN FUCHSIA.

INV. '60

HORTICULTURE.

The FARM AND VINEYARD is regarded as the official organ of the Chautauqua Horticultural Society.

PRACTICAL GRAPE PAPERS No. 2.

Preparing the Land.

BY H. H. T.

The first matter of importance in the preparation of the land is a thorough system of drainage, but as this matter was explained in our last paper, it is not necessary to repeat it.

Next in importance to well drained land, is clean land. Never plant land overrun with Canada thistles, docks, etc., to grapes. I have always found it cheapest in the end to clean the land first and plant the vines afterwards. Although many acres have been, and many acres will be, planted on poor sod land, with little or no previous cultivation, it is not to be recommended. If I could have my choice I would plant on land that had been well cultivated and manured, and brought into a high state of cultivation for previous crops; if this is not possible, see that the land is thoroughly broken up, not merely a hole large enough to hold the roots, but the whole plot should be broken up to a depth of at least eight inches, and a foot would be better. To do this properly the ordinary plow should be followed by the subsoil plow, stirring and loosening the subsoil so that the water will pass through to the drains, natural or artificial, freely.

After the plow and subsoiler, follows the harrow or pulverizer, the Disk harrow being one of the best implements for the purpose. But great care should be taken in preparing the land for grapes or any other crop, never to plow, pulverize or harrow when the ground is wet, for if plowed or harrowed when the ground is wet the particles stick together, and in some soils the bad effects show for years.

If there are any large stones or tree stumps, remove them previous to planting. I passed through a splendid vineyard a few days ago, or rather i would have been splendid but for one thing; the owner planted the vines without removing the old stumps, with which the land was pretty well sprinkled, intending to remove them before the vines commenced to bear. But alas! the stumps are there yet, and oh what a job it is to properly cultivate those vines, and the tools broken in the attempt would more than doubly pay the cost of removing them.

See also that the outsides of the field are cleaned up, and tear down the old fence rows, as you will need the land occupied by the fence, as you must have sufficient space to get around the field or vineyard with a wagon, which will be needed to collect the baskets of fruit during the fruiting season, hauling on manure, etc. If a fence is really necessary, put up a light wire fence, one that will take up the smallest amount of room and give free passage to light and air.

In preparing the land for planting you should know before hand just how many vines you are going to plant, and make preparations accordingly. For instance: An acre planted with the rows ten feet apart and the vines seven feet apart in the rows, will take six hundred and twenty-two vines. If you wish to plant at any other distance apart, the way to ascertain the number of plants required for an acre at any given distance apart, is by dividing the number of square feet in an acre of land, 43,500, by the number of square feet given to each plant, which is obtained by multiplying the distance between the rows by the distance between the plants; thus vines planted 7 feet by 10 feet gives each plant 70 feet, or 622 plants to the acre. Another matter to which I attach more importance than some growers, is the direction in which the rows are planted; always plant the rows north and south, if possible. My reasons for this are obvious: During the hotest part of the day, midday, when the sun has the greatest power, it is shining on both sides of the row at the same time; if planted otherwise, at this particular time of day one side of the row would get more sun than is really necessary, while the other side of the row would be in the shade.

Again I have found that vines planted with the rows running plain north and south break more evenly in the spring, thus insuring a more uniform growth, and ripening of the fruit

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Our aim is to study the wants of our subscribers, and all our subscribers want seeds, bulbs and plants. You can have them mailed direct from the most reliable houses in this country. Purchasers of fifty cents' worth and upwards receive the FARM AND VINEYARD one year free.

Care in the Fall.

BY N. J. SHEPPARD, Miller Co., Mo.

For the FARM AND VINEYARD.

Quite a number of varieties of trees are benefited by mulching during the middle or latter part of summer for two or three years after setting out. One advantage in this is that properly applied, mulching aids to retain moisture in the soil and the trees suffer less from the dry, hot weather.

But in many cases it is best to remove this mulch before cool weather sets in, as the trees will make too much growth of wood, and continue growing so late that there is not sufficient time for the new growth to ripen and harden, and in consequence they are seriously injured by cold freezing weather. By removing the mulch in good season, so as to give the new growth of wood plenty of time to harden, this injury may largely be prevented. Later on, after the ground freezes hard, the mulch can be applied again and will protect the trees from injury during the winter, from thawing and freezing.

After the vines are done fruiting in the fall is a good time to prune the grape vines, as there will be no bleeding, and the wound will heal over. If necessary, especially with young vines, they can be laid down after pruning, and be protected by a covering with straw.

One of the best plans of management, where it is desired to set out trees, is to secure them in the fall and carefully heel them in. A good part of the work necessary in getting the soil ready can be done in the fall, so that in the spring very little work will be necessary. One advantage with this plan is, that in a majority of cases the work of setting the trees out where they are to grow can be done much easier than would otherwise be possible.

When the other farm work will permit, in the fall is a good time to prune, and with grapes, quinces, currants, gooseberries, and some other varieties of fruits, when the pruning is done is the best time to make cuttings. All the wood, or brush, not needed for this purpose should be gathered up and burned; in this way many insect pests and germs of disease will be destroyed.

All newly set trees should be protected from rabbits early in the season; even a few days delay in doing this work will occasion a serious loss, and the better plan is to apply in good season.

Notice of our new list of Agricultural and Horticultural Book Offer this month. Every order amounting to 50 cents and upwards, carries with it a years' subscription to FARM AND VINEYARD,

Taste vs. Thrift.

BY ALBERT H. RHODES.

For the FARM AND VINEYARD.

That farmers should lack in taste occasionally as well as people of other craft, should not seem strange, when we remember that they are scattered around and do not learn of others like the city dude. But many times this is carried farther than seems necessary for actual thrift, and then it might be remedied if they could only see where the remedy might come in. To be sure, there are farmers, like others, that care more for taste than for thrift, and sacrifice the latter for the former often. But if these are not the exception they ought to be. It, however, seems to me that both should be combined so as to sacrifice neither of them. First, as to our general appearance, we might many times become so much like others that especial attention would be called to us at once when out from home. And then, he might build with an eye to taste as well as utility. By this I do not mean we should make those little aerial cottages one often sees in the suburbs of our cities, but that we should build homely, clumsy looking homes in which to rear our families, but have an eye to taste as well as thrift. Combining these will be nearly the correct idea. And then in regard to our surroundings, our lawns, our shade trees, our orchards, our graperies, taste should enter into all their arrangement. How often we see property change hands, and the new comer proceeds to demolish all or nearly all his predecessor had built or planted before anything seemed at all satisfactory to him. Now it seems to me this might have been avoided if the first farmer had used taste in building and planting.

Of course tastes differ, and it would be almost impossible for two men to view the surroundings alike, and yet, with a proper discernment in such matters, thousands of dollars might be saved that are now thrown away in refitting homes all over our country. And here I would like to say that thrift should not give place to taste; no, never! but there should be a combination of both when possible. The hog yard should not be on the road side close by the house. Neither should the hen house be contiguous to the parlor window, where a fresh breeze will waft in the aromatic flavor. The out buildings should all be a reasonable distance from the house, and there should be no possibility of anything leading into the well which furnishes the water for the family. There should not be large shade trees to hide the prospect and prevent the sun from shining in freely when desired, or the air circulating freely for the sanitary condition of the wife and children. The buildings should be well preserved by being often painted some fast color which will look well at a distance, and the roofs of all buildings should be impervious to water. Thus thrift should enter into all the generalities of farm life as well as elsewhere. You occasionally see a farmer who builds a charming cottage among the trees, almost ethereal in its first beauty; but, lacking in thrift, the farm grows up to weeds. The paint is soon off the cottage and it begins to present a tumbledown appearance. The property is at last sold at a loss, and the frail structure is probably pulled down for kindling wood for some farmer who combines thrift with his taste.

The *Rural and Poultry World* is a very neat and practical journal, published at 50 cents a year. Anticipating the wants of our readers, we have made arrangements to supply the *Rural and Poultry World* and FARM & VINYEARD, both one whole year for 50 cents.

The White Minorcas.

Elsewhere in this issue will be found the advertisement of Wm. J. Schauble, who breeds the above named fowls exclusively. As the tendency is towards thoroughbred stock, we believe it would be to the advantage of those interested in pure bred poultry to correspond with Mr. Schauble in regard to this variety.

We are still offering the premiums previously offered. Don't you think you could get us a club if you tried.

Don't subscribe to any paper till you have written to us for our prices. In most all cases we can give you two papers for the price of one.

Any lady who accepts our "premium" offer on page 4, and is not well satisfied with her bargain will have her money refunded on application

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If the FARM AND VINEYARD is missing any month, write directly to this office and we will promptly forward a duplicate of any copy, to which you are entitled.

The Gardener's Assistant.

SEPTEMBER.

LETTUCE.

Lettuce for early spring use should be sown about the middle of the month, selecting a somewhat sheltered spot with the ground well pulverized and free from weeds. As soon as the plants are large enough they should be transplanted in cold frames, where they are to remain during the whole winter, giving air freely on warm days. The best of the curled kinds for this purpose are Black-seeded Simson and Grand Rapids, both good forcing varieties. Of cabbage lettuce there are several good kinds, but probably none better than Premium Cabbage, or All The Year Round, both good varieties for either forcing or growing out of doors. In southern parts of the country lettuce seed can be sown in any dry, well sheltered spot, and by covering with leaves or litter late in the season can be kept through the winter without injury without any glass covering whatever.

PARSLEY.

Parsley for winter use can be sown now in a cold frame, in rows about a foot apart, or, where a large bed was sown last spring, the plants can be lifted the end of the present month and the plants transplanted into boxes about six inches deep and any size convenient to handle. These boxes can be placed in cold frames or any cool place, such as a cellar window, where they will get some light without too much freezing. If placed in cold frames the sashes can be left till November. By this means the plants will be much hardier than if the sashes were put on at once

RADISH.

Make your last sowing of radishes now, choosing a warm, well sheltered spot, and rich soil.

SPINACH.

This is a very important crop in our market gardens, and should be planted in every farmer's garden for family use, as it is one of the most easily managed of all vegetables and the most generally appreciated. It requires but little culture and can be had in use the greater part of the year. Now is the time to sow the main crop, using the thinnings for late fall and early winter, and if planted in well sheltered spot and protected with a light covering of leaves or litter, which will prevent it being cut by the frost, it will live through the winter and form a delicious dish in early spring, or, if not wanted for home consumption, will sell for a good price. We have found the Long Standing to be the best variety.

CABBAGE.

Although it is now several years since we have sown cabbage seed in the fall and wintered the plants over in cold frames, causing considerable fuss and bother, there are some who still think it *the* only way to grow early spring cabbages though we never had such good success as with seed sown in early spring. Our plan is to sow two or three of the early varieties about the first of March in shallow boxes filled with light soil and place in a greenhouse or hotbed. As soon as the plants are large enough to handle we transplant about an inch apart into similar boxes, using the same kind of soil and still keeping the boxes of plants in the hotbed or greenhouse, giving air freely on bright, sunny days, and nights also, when there is no danger of severe frost. By this means we get a strong, quick growth, and by the middle of April, the earliest, we can plant out in the open field in the neighborhood of Eric. We have a sturdy plant that has maintained a steady growth since its first appearance above ground. We have invariably grown better and earlier cabbage than by the old way of wintering in cold frames, in which case the seed should be sown (according to the late Peter Henderson's *Gardening For Profit,*) from the 10th to the 20th of September, and attention to these dates is important. If sown earlier the plants will probably run to seed, and if sown later they will be too small to transplant and get established in the cold frames before the frosts of winter. Early Jersey Wakefield, Winningstadt and Early Drumhead are all first-class early varieties.

Celery planted out in July will now require handling, as the first earthing is called. After all the soil has been drawn up against the plant with the hoe, take the leaves of the plants in one hand and with the other press the earth firmly around the stalks which will hold them in place. This answers the purpose of keeping the stalks firmly in place as well as by the old way of tying, and is a great deal easier and cheaper. Before handling run the cultivator between the rows several times to thoroughly loosen the soil.

Chrysanthemums now require daily attention as to watering, tying, etc. If a plant growing in a pot is allowed to become dry now no after care will repair the damage. At the same time great care must be taken to prevent the hole at the bottom of the pot from getting closed by worms or any other cause, causing the plants to become water-logged, for, while no plant suffers so soon from a lack of moisture as the Chrysanthemum, no plant suffers sooner from an excess of water in the growing season. All plants growing in pots over four inches in diameter should have broken crocks or something similar so arranged over the hole in the bottom of the pot that worms cannot enter and water can pass through freely. This may seem a very simple matter to some, but how many neglect this small matter, causing the loss of valuable plants.

Keep the cultivator going through all growing crops. Every weed that gets any show now is ripening seed which means lots of work and loss next year.

Tender flowering plants will require to be under shelter by the end of the present month, and cuttings taken and propagated of such kinds of bedding plants as geraniums, heliotrope, lantanas, verbenas, etc., to get a growth and roots sufficient to pass through the winter safely, where the only quarters that can be given them are the cellar, or at best the kitchen window.

You will do yourself and us a great favor, my friends, if, when writing to advertisers, you say you saw their advertisement in FARM AND VINEYARD. They always use FARM AND VINEYARD customers well.

Fall Plowing.

BY N. J. SHEPPARD, Miller Co., Mo.

For the FARM AND VINEYARD.

The character and lay of the soil must largely determine whether or not it is best to plow in the fall. Some soils are benefited, while with others it would be very injurious, and especially so in loamy soil laying so that it would wash badly. When it can be done, fall plowing has several advantages, and hence it is quite an item to get in early, and having the ground plowed is an important item, and will make it possible in a majority of cases to get the seed planted in better season. Land plowed well in the fall dries out and warms up quicker, and is in a condition to work earlier than if left unplowed until spring.

It is, of course, necessary to plow well, and then provide thorough drainage so that the surface water can be carried off readily.

Another advantage with fall plowing is that it affords a good opportunity for deepening the plowing. When land has been plowed shallow for several years, it is rarely advisable to deepen too much at one time, and especially when done just previous to the planting. New soil brought to the surface by plowing needs the effect of light, air, rain or snow, in order to make the plant food it contains available, and by plowing in the fall it is subjected to these influences before time for planting.

In nearly all cases deep plowing and shallow cultivation will give the best results, and fall plowing can nearly always be done a little deeper than spring. On the majority of farms work is not so pressing in the fall as in the spring. In fall plowing care should be taken to turn everything under, and to plow reasonably deep and thorough. While there is not a great amount of manural value in dry weeds or stalks, yet the mechanical effect is beneficial, as they help to make the soil more loose and friable.

Of course better results could be secured by plowing when the growth is green, but this is not always possible. After plowing run out sufficient fur rows to afford good drainage. With the ground well plowed in the fall a better opportunity is afforded for hauling out and applying a good dressing of manure, and this work can be done at any time during the winter that there is manure to haul. It will lessen the cost of hauling the manure to haul direct from the stable on sleds to the field and apply, and having the ground well plowed puts it in a good condition to get the full benefit.

So that, all things considered, when it can be done, the land intended to be sown or planted to crops in the spring should be well plowed in the fall.

FARM AND VINEYARD is one of the periodicals mentioned in Geo. P. Rowell & Co.'s Book for Advertisers.

Shrubs and Trees in Autumn.

In early autumn the foliage of plants and trees begin to change color, and the cooler nights and heavy dews which are characteristic of this season of the year demand some change in the treatment of the plants and shrubs. The time of watering and syringing them should be changed from the evening to the morning. If watered toward night there is likely to occur an excessive condensation of moisture on the foliage during the night when the heavy dews are falling. If watered in the morning the plants have time to absorb the moisture, and get dry before the night dews begin to fall. Too much watering will injure some of the more delicate shrubs at this time of the year. The plants that are kept in pots may be set out in the open air during the daytime, but they should be taken in at night, or protected by some frames. Palms, especially, need looking after now. If they are pot-pound they should be changed at once so that their roots will get a firm hold of the soil before cold weather. Avoid too much watering, unless it is desired to have the palms grow very rapidly during the winter.

Taking up plants for winter is now one of the most perplexing problems to face. A mistake is often made in waiting for a soaking rain previous to taking plants from the ground. Experience proves that the dryer the ground the better the time to life succulent plants. There is then a minimum of sap and the plants approach the condition of the hardy plant early in spring, being more or less dormant. Plants that have been previously root-pruned can now be lifted with a shovel and placed in a tub of water, washing off all soil that adheres to the roots, and new soil given. If potted now the plants will begin to respond at once to the changed conditions and grow apace.

Those who favor the practice of transplanting fruit trees in autumn should remember that they need special attention in the fall They should be made to stand firmly, and if inclined to whip about by the wind they should be staked. If the trees are rather large for transplanting, and the roots have been cut short in digging them up they will not be likely to stand well.

We pay cash to agents who work for us, getting subscriptions to the FARM & VINEYARD.

We want an active agent at every fair this fall. Write for our terms, it will pay you.

Any person who has no use for any of our premium offers, should write for our liberal cash commission to agents.

Subscribe for FARM AND VINEYARD.

HEALTH TALK SERVICE.

THE HOME DOCTOR.

The Morning Bath—Summer Eating—Insomnia and Its Cure.

BY A. ATKINSON, M. D.

For the FARM AND VINEYARD.

The morning "tub" has become a necessary adjunct to our modern civilization. Along with a wider diffusion of sanitary knowledge among educated classes, a better knowledge and appreciation of the needs and functions of the skin have gone, until each individual is gradually becoming the intelligent custodian of his own health. The skin is of great value as a waste pipe, and the morning bath is the only thing that will keep it in proper condition to do its work. In the summer time this practice should be observed more rigidly than in the winter. It is at this season of the year that large quantities of effete matter are being thrown out of the system, which, if allowed to accumulate on the outside of the skin, will produce skin diseases, prickly heat, nattle-rash, and other disagreeable complaints. The heat aggravates any skin disease, especially in parts of the body where friction occurs. Many patients are subject to prickly heats and skin eruptions during the heated term. In such cases the skin should be bathed freely with cool water morning and evening. The skin should then be dried carefully, and the places of friction dusted with toilet or starch powder, to absorb the perspiration. Excessive drinking and warm drinks should also be avoided for a time.

Besides for healthfulness, the morning bath should be taken regularly for the purposes of cleanliness. The perspiration of some people is so offensive that the odor may be perceived by those with whom they associate. The quality of the perspiration changes with the season, and in summer it is especially loaded with foul-smelling elements. In such cases the only remedy is to bathe once or twice a day, and even oftener if necessary. A change of linen daily will in some cases be necessary. Tar or carbolic soap should be used freely with the water. If the odor is not then removed some perfume should be used about the person.

INSOMNIA, A GREAT COMPLAINT IN HOT WEATHER.

"If I could but sleep these hot nights, I would enjoy life so much better," is the unuttered cry of thousands of toiling people in our cities and villages. Wakefulness, or insomnia, is becoming a universal complaint in America, and hundreds of fine intellects are weakening before the attacks of this insidious disease. The stress of business, the competition in every line of work, and the worry and anxiety of professional men, are gradually threatening our finest intellects with insanity. In the summer time the complaint is aggravated by surrounding circumstances, and unless one can go to the sea shore or the mountains, sleep seems impossible at the proper time. The summer rest diminishes this complaint, for physical exercise in the open air is the greatest remedy for insomnia. It is sometimes necessary to carry it to the verge of fatigue. A shower bath twice a day, upon rising and retiring, will be found to benefit the patient suffering from wakefulness. Change of place and scenery is also a valuable auxiliary. Drugs should be avoided. A small dose of opium, quinine, alcohol, or belladonna will invariable produce wakefulness. To induce sleep they will have to be used in such large quantities as to be injurious to the system. All sorts of stimulants should be avoided during the evening, and if possible a walk, row, sail, or ride should be taken in the open air after dinner, and shortly before retiring.

As mental work causes insomnia, it should be lessened as much as possible. Wakefulness is always the result of a too large quantity of blood in the brain, and anything to relieve this will be beneficial. Lying down has a tendency to produce congestion of the brain, and the blood circulates more freely in it when the patient is in a recumbent position, than when sitting up. If possible the head should be as high as convenient, so that the flow of blood to and from the brain will be decreased in quantity and force. Many persons when subject to hallucinations when lying down, can sleep peacefully in any arm chair. The pillow should not be too soft. Hot water bottles placed at the feet will sometimes have good results. Above all plenty of pure air should be allowed to circulate through the chamber. A salt water bath in the morning sometimes braces up the system so that insomnia is cured in a few weeks.

Subscribe for FARM AND VINEYARD.

The Cosmopolitan is published at $2.40 a year, and is considered cheap at that; but look here, $2.00 gets the *Cosmopolitan* and FARM & VIVEYARD, both for one whole year if you send your order to FARM & VINEYARD, Erie, Pa.

Show this paper to your neighbor and tell him it costs 25 cents a year. If he don't want to subscribe for a whole year he can have it on trial at the following rates: three months, 10 cents; or, six months, 15 cents. Subscribe now, while the offer is open.

We want a bright boy or girl in every township, to take orders for FARM AND VINEYARD, and our beautiful picture, Christ Before Pilate. The paper a year, and the picture, both for 50 cents. It sells on sight. Some of our boy and girl agents are making from $5 to $20 a month. Write at once for terms.

Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 50 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

SAVE THE CORN FODDER.

American Cultivator Makes Suggestions with a View to Preventing Waste.

Until within a comparatively short time the large corn growers really looked upon the earcorn as the only valuable part of the crop, and the stalks were largely wasted as a consequence. But now our superior knowledge of the crop teaches us that the stalks have almost as much value as the ears. The problem to study is how to understand the art of saving corn fodder so that we can have cheaper and better rations for animals.

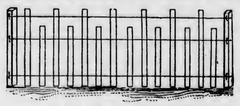
An important question just now is to ascertain the chemical composition of cornstalks at different periods of their growth, and of the ensilage made from the same. If this is known farmers and stockmen can fix upon the best time for cutting it. A few general rules, however, have been brought out by experiment. The fodder plants are most valuable just before they reach maturity, and more nourishment is to be obtained from them when cut in this succulent stage. When they ripen more the amount of food increases, but along with this there is a great increase of woody fiber. Going on the principle of using concentrated food for stock the fodder cut early would be far preferable.

It has been a common mistake in the past to forget that about 60 per cent. of the feeding value of corn comes direct from the sunshine and air, and when these are excluded the full feeding value of the crop cannot be obtained. Many still sow from two to four bushels of corn seed to the acre to make it thin and fine for fodder, but the best results are obtained when only eight or twelve quarts are used to the acre. This should be planted in drills, and then the air and sunshine have a chance to circulate through the plants. Another practice is to sow the corn thickly, and then thin it out for feeding purposes after it has reached a fair height. The fault with this method is that the stalks left remaining are deprived of their full growing powers at a time when they are most needed. One week of the first life of a cornstalk is worth nearly three weeks at the close of its life, and if it is crowded when it is young its highest feeding value will never be obtained by thinning out the stalks when they are half or three-quarters grown.

A Suggestive Idea About Fences.

Ohio Farmer makes the following suggestion, as there is a large amount of wire and picket fencing being built at present.

Instead of every picket being full length, let every other one be only one-half length. As the pickets used in such fences are generally two inches wide,



WIRE AND PICKET FENCING.

with spaces from two to three inches, it can be seen that this fence will turn all kinds of stock as well as if all the pickets were full length. The advantages of such a plan are: 1. A saving of one-fourth of the picket material. 2. Less wind surface, thus making it more substantial. 3. Neat and tasty appearance.

M. Crawford said at an institute lately that he would not prune an orchard any more than he could do with his pocket-knife. While young he would prevent any little limbs starting out wrong from time to time, but do no wholesale pruning.

Farm & Vineyard

Premium Offer Extraordinary For the Benefit of all the Wives and Daughters.

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COMPLETE WASHER.

Price $5.00, or we will send the Washer for one subscription at 50 cents and 75 cents additional. There is not a woman who reads this paper, but can become the possessor of one of these valuable machines, by spending a few hours among her neighbors to secure the subscribers.

The paper alone is worth every cent we ask for it, but as an inducement, to all who read this, to become permanent subscribers, we make this liberal offer.

Show this copy of Farm & Vineyard to your friends, and if they can't pay you cash down for a year's subscription, you can well afford to wait on them for a few weeks for the sake of securing this valuable washer at so small a cost.

Send us the names now with the cash and we will commence mailing the paper and ship the washer at once by Express, with explicit directions how to use it.

We have *thoroughly tested* this machine and know it will give entire satisfaction, furthermore the manufacturers, (who are responsible) authorize us to warrant every machine for five years. It will fit any tub and will do all kinds of washing with a saving of more than half the time and labor over the old rubbing process.

Send in your Clubs and give us the name of your express office. The charges will not be excessive as the washer is light and must in all cases be paid by the receiver. Address,

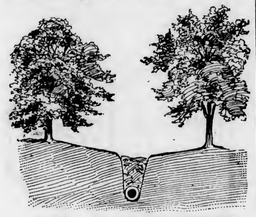
FARM & VINEYARD PUB. CO., Erie, Pa.

FRUIT AND FLOWERS

DRAINING ORCHARDS.

An Illustrated Description of a Plan Recommended by Country Gentleman.

Every observant orchardist has had occasion at different times to witness the advantages of good drainage in apple orchards and the injury which the trees sustain from watersoaked roots. Wet feet are not good for them.



ONE PLAN FOR DRAINING ORCHARDS.

Large bearing trees have been sometimes greatly improved by artificial drainage where standing in soils and subsoils liable to be heavily soaked by rains. The tile has been laid two and a half or three feet below the surface. In order to escape the danger of the pipe becoming filled with the small roots it has been placed midway between the two rows of trees, a rod distant from each, as shown in the annexed cut, the tile being in the portion of soil especially filled with the small fibers, that were particularly benefited by it.

Sweet Scented Roses.

Although most all roses are sweet scented, still there are a few so far in advance of all others in this respect as to claim a few words to themselves. Catherine Mermet has a fruity perfume suggestive of apricots. La France has a delicious perfume peculiar to itself. Baronne Prevost, Abel Grande, General Jacqueminot, Mme. Clemence Joigneaux, Senateur Vaisse, Mme. Furtado, Louis Van Houtte, Geant des Batailles and Anna de Diesbach are a few old Perpetuals that are extra sweet, while Souvenir de la Malmaison and Baronne de Noirmont are two good Bourbons. The old Cabbage or Provence rose is too well known as one of the very sweetest to need any special mention here. Marechal Niel is the sweetest of all yellow roses. Among the newer roses Mme. Renahy, the Puritan and Mme. Joseph Godier are particularly sweet. Anna Marie de Montravel and Gloire des Polyantha, two miniature roses, are also very sweet.

The Fancy Leaved Caladiums.

A writer in American Garden recommends the fancy leaved caladiums as particularly fine exhibition plants for summer and fall for conservatories, window boxes or shady beds. Get dry bulbs, fill a shallow box with sphagnum moss and place the bulbs in it, keeping them well covered. The box must be kept in a warm place until the roots are well started; then fill large pots with soil composed of peat, sand and a little charcoal; add some old, well rotted manure and thoroughly mix it with the soil. Place the bulbs in deep enough so that they may be covered with an inch of soil. Several bulbs should be used in pots of from twelve to fifteen inches in size, as the bulbs planted singly will not make good specimens. Some of the leaves will measure as much as half a yard long, and often very much longer. Caladium esculentum is said to have leaves nearly four feet long and two feet wide, if it is grown in soil that is very rich.

Flower and Fruit Notes.

According to census returns one-third of the total industry of the florist business has been developed within the past ten years, two-thirds within twenty years and four-fifths within twenty-five years. In 1890 we had 4,659 commercial establishments.

The first thing to be considered in getting new varieties of fruit is the quality and flavor. Without these size amounts to little.

The area planted to American vines in France is constantly increasing.

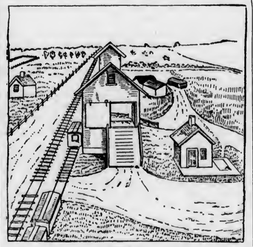
Dwarf fruit trees, including apples, cherries, plums and pears, are well recommended as fine for ornamental shrubs.

A SMALL GRAIN ELEVATOR.

How One May Be Built—A Necessity in Farming Districts.

[Copyright, 1891, by American Press Association.]

In nearly every town or village in the great farming region of the west there is a grain elevator or storehouse, where the farmers may dispose of their produce. This building must necessarily be of some pretentions as to size and strength, depending of course upon the area of country by which it is patronized for the required capacity. In such a structure the capacity and weights to be carried should be carefully computed, and the timbers which



VIEW.

support it proportioned accordingly. The standard of measure is the United States Winchester bushel (dry measure), the capacity of which is equivalent to 2,150.42 cubic inches.

One bushel of wheat or beans, 60 pounds.

One bushel of corn or rye, 56 pounds.

One bushel of oats, 32 pounds.

One bushel of barley or buckwheat, 48 pounds.

One bushel of peas, 64 pounds.

Cracked corn, corn or rye meal, 50 pounds.

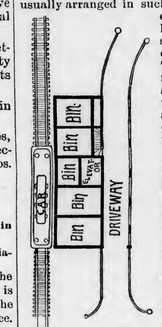
From the data above given it is an easy matter first to compute the capacity of the proposed bins. By simply reducing the cubical contents to inches, and dividing the total number of inches by 2,150.42, the number of cubic inches in a bushel, will give the number of bushels which any bin will contain. To determine the weight to be carried multiply the number of bushels by the weight per bushel of the particular kind of grain which it is desired to store. To the weight of the contents of the bin must be added the weights of the floor and beams, planking, spikes, etc., to obtain the total load to be carried by the supporting structure.

A cubic foot of yellow pine (dry) timber will weigh 45 pounds; oak, 50 pounds; white pine, 25 pounds; spruce, 25 pounds; hemlock, 25 pounds. To obtain the number of pounds of timber in any structure we reduce the number of feet of timber in board measure to cubic feet and multiply by the number of pounds in a cubic foot of the particular kind of timber used.

The safe load for warehouse floors is usually estimated at 250 pounds per square foot in addition to the weight of the floor itself, which will vary from forty to fifty pounds per square foot.

The most economical and safe way in case of an important structure is to employ a skilled engineer or architect to make the necessary calculations.

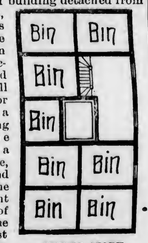
Of course, your warehouse should be located near a railroad, and a side track is usually arranged in such a manner that empty as well as loaded cars can be switched into the desired position. The cars are filled from the top by spouts connecting with bins, which are located a sufficient height above the car to enable this to be done successfully. The foundations should be of masonry, with broad footings proportional, so as to carefully support the weights. Ordinary earth will safely carry from two to four tons per square foot. The main entrance and driveway leads to the first story, where the grain is unloaded and discharged into the elevator box and carried from this to the location desired. There are two entrances and driveways on opposite ends of the building so that the unloaded wagons may pass out without turning around. The driveways consist of a heavy plank floor spiked to strong timbers, with a railing on each side to prevent accidents.



GROUND PLAN.

The grain elevators used consist of buckets attached to a belt which runs over two pulleys, and is so arranged that it may be run horizontally or vertically or at an incline. It is propelled by horse power in most cases, attached to gearing in the basement. The elevator should be placed in a central location, so that the grain may easily be distributed to different parts of the building. There should always be a ventilator with open louvres on the sides to allow a free circulation of air, as grain when stored in large quantities will generate spontaneous heat.

The office of the warehouse is generally placed in a small building detached from the warehouse, with large scales for weighing. The illustrations given show the perspective view and plans of a small warehouse for storing grain in a western farming district. The building is a frame structure, firmly braced and secured from the shocks of violent winds. The roof and sides of the building are first covered with surfaced lumber and waterproof paper; the roof is shingled and the sides boarded with ⅞x6 tongued and grooved lumber and painted. The doors are double battened and hung on rollers, all provided with locks and the necessary fastenings. The building can be erected for about $5,000 complete.



SECOND STORY.

A good way to construct grain bins is to spike 2x8 or 2x6 planks according to the size of the bin, lapping them at the corners, so as to touch joints, and building from the bottom. Laid in this manner it will make one of the strongest forms of bins.

RALPH R. RAYMOND.

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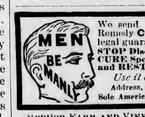
SEND 6c in stamps to OHIO POULTRY JOURNAL. Dayton, O., for sample copy.
Mention FARM AND VINEYARD.



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Safe and Sure. Send 4c. for "WOMAN'S SAFE GUARD." Wilcox Specific Co., Phila., Pa.
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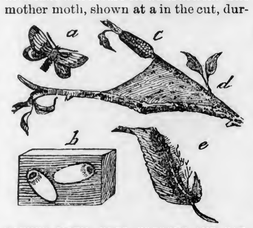
A Scientific Mechanical Journal of valuable information.
All the latest news about Aluminum and its manufacture. Very interesting experiments with the new metal never before published. Bright, clean, crisp articles of great interest to all people. Socially, professionally and commercially, strictly in accordance with a high moral standard. The ALUMINUM AGE is one of the few journals of a very large circulation. *FIFTY CENTS A YEAR*, including a pure Aluminum Coined Souvenir, with Lord's Prayer engraved, worth its weight in gold.
The *New England Journal of Education* says: "It is worth as much to the teacher in his class as to those aspiring to government positions. It is rarely that any Journal can be found with so many valuable and few unimportant questions."
Mention FARM AND VINEYARD.

THE TENT CATERPILLAR.

The Surest Method of Warfare Against It, as Explained in The Farm Journal.

As the apple tree tent caterpillar was more numerous than usual last spring, readers ought to be interested in measures that will insure its destruction. The mother moth, shown at a in the cut, dur-



MOTHER MOTH, EGGS, COCOONS AND CATERPILLAR.

ing the summer months will busy herself depositing clusters of eggs on the small twigs of the apple trees, as shown at c.

The easiest and surest method of warfare is to clip these twigs with their nests full of eggs and burn them at any time between now and next spring. If left they will hatch in early spring, the young caterpillars will crawl down the limbs to a fork and start a little white silk nest, as seen at d, and from this home go out during the bright and sunny part of every pleasant day to pasture on the leaves. Many may be destroyed by burning these silk homes when they first appear with a torch of paper and kerosene fastened in a stiff wire and attached to a long pole. Many apple growers have destroyed them by firing heavy charges of powder into them from guns or large pistols. All these remedies must be used mornings and evenings. Any that escape will crawl off after they are full grown, as at e, and spin silk cocoons as represented on the block of wood at b. Within this the insect changes to a pupa, remains about three weeks, and emerges as the moth, to lay more eggs and die.

Better strike the little nests of eggs now and shoot or burn their pretty silk homes wherever seen in the spring. Professor Comstock adds that spraying the trees with paris green as soon as the leaves appear will poison the caterpillars in their feed, and is one of the best ways of fighting them.

Poultry Points.

Hens that lay white eggs as a class lay as many as those that lay eggs of other colors within the year, but not as many in the late fall and winter months, without special care, and in cold weather eggs always bring higher prices and then the profits are much greater. Most white skinned fowls lay white shelled eggs.

It is a good plan to feed a little oil meal in the morning or at noon with the soft food; about once a week will be sufficient. It will act gently on the bowels, glossen the plumage and is really a useful food to give a flock occasionally. It is also a valuable feed for cattle, horses, sheep and hogs, and no good farmer should be without it.

There are no two breeds that have so firm a hold on the breeders of America as the Brahmas and Plymouth Rocks. Those who keep fowls for profit and those who are compelled to satisfy their tastes inside the most practical breeds invariably keep the Brahma or Plymouth Rock; the demand will naturally be greater for these two breeds.

The broiler industry, the rearing of roasters and capons and the egg farm are in their infancy. Their growth is going to be rapid. When this demand has really begun to be felt, the breeders of special purpose fowls will not want for orders. The demand for India Games, Dorkings, Leghorns, Minorcas, Red Caps and similar fowls is growing, and the breeders of these varieties are increasing with great rapidity.—American Agriculturist.

Oats as Pig Feed.

Many farmers consider oats as a part ration a most excellent feed for hogs. Southern Cultivator mentions hearing a successful farmer speak much in their praise. His custom was to use equal parts of corn and oats, ground, and on this ration his hogs did splendidly and were exceptionally free from disease. Against this is an experiment that showed very plainly that a sow suckling young pigs did not thrive well on a ration of about two-thirds oats. The chaff seemed too much like straw for the sow to relish them. When the pigs have attained some size a ration one-third oats to two-thirds cornmeal is recommended as producing good results. For brood sows and stockers they can be used with profit where a maintenance ration is the object sought. Shorts make a better mixture with cornmeal for a sow suckling, as the pigs will gain faster on this ration.

Good Spicy Muskmelons.

The editor of Popular Gardening likes good spicy muskmelons, such as, for instance, the Emerald, Gem depicted in the accompanying cut.

He says, concerning the Emerald Gem: "Its superior in flavor we have never met. Some of our neighbors grow Hack-

EMERALD GEM MUSKMELON.

ensack and similar sorts for market. We find most of these ordinary sorts too late for our climate and grounds unless started early under glass and transplanted. But we do not see what we could gain by growing these later sorts merely to get size and insipidity, when we can plant the Emerald Gem in open ground in its proper season and get quality, sweetness and spiciness."

The Emerald Gem is early; consequently we can plant it confidently expecting a long season of the most luscious melons imaginable. This variety well deserves a little extra painstaking to make it earlier. Our way is to dig a hole for each hill and fill it with a mixture of sand, rotten manure and loam, and plant the seed in this.

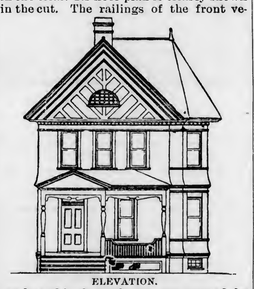
Mr. W. C. Barry tells that Mme. Georges Bruant is one of the hardiest roses in his collection. It came through the past winter without being injured in the least. So said The Rural New Yorker. So said Mr. Falconer. It is hardy, therefore, thus far in Rochester and in Queens county, N. Y., and in Bergen county, N. J.

A COZY COTTAGE.

It Costs $2,000 and Is Comfortable, Convenient and Good Looking.

[Copyright, 1891, by American Press Association.]

The floor plans and perspective view herewith presented are of a suburban cottage or small farm house, compactly arranged and homelike in appearance, containing every convenience for a small family. Its width is 20 feet, with a projecting bay of 7 feet. The length is 28 feet, exclusive of the front veranda and back porch and pantry. The cellar extends under the entire building. It is 7 feet high in the clear, with cement floor, and walled with stone laid in cement mortar, pointed inside to the grade line and both sides above it. Access is had to the cellar by a flight of stairs opening from the kitchen. An outside hatchway may also be provided if desired. The first story is 10 feet high in the clear. Its floor plan is clearly shown in the cut. The railings of the front ve-

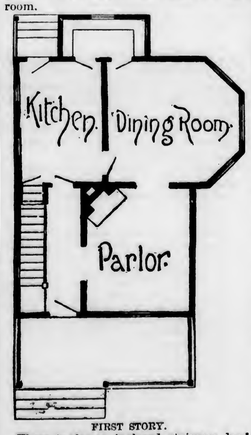


ELEVATION.

randa and back porch are surmounted by shelves to hold potted plants. The parlor is provided with an open fireplace, mantel and grate complete. One end of the dining room is octagon in form and carried up and roofed as a tower, with windows on all sides, which contribute to give it a bright, cheery aspect at all times of the year. The two rooms may be separated by sliding doors or portieres.

The parlor communicates with the hall in the same manner.

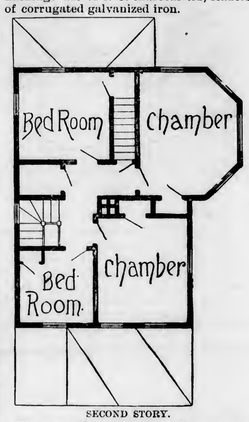
The woodwork in hall, parlor and dining room is of red oak, finished with one coat of wood filler and two coats of wood preservative, rubbed smooth. The woodwork of the kitchen is finished with one coat of hard oil and one coat of the preservative, rubbed smooth. The second story is 8 ft. 6 in. in the clear. It has two good sized chambers, two small bedrooms, bathroom and wardrobe closets for each room.



FIRST STORY.

There is also an inclosed staircase leading to the attic. The bathroom is finished in yellow pine; the floor in first story of yellow pine; in the second story and attic of spruce; all other woodwork in the second story of white pine, painted in two coats. The attic is unfinished with the exception of the flooring.

The veranda in front is finished in white pine, with turned posts and balusters in the railing, with lattice work between the piers. The roof is shingled, the ceiling covered with beaded white pine ceiling boards. The side walls and roofs of main building, tower and dormer are sheathed with surfaced lumber and covered with waterproof paper. The lower story of the main building is clapboarded with clear white pine beveled siding. The lower story of tower and the second story and gables, cheeks of dormer window, etc., are shingled with best quality white pine shingles, with rounded butts in the gables and octagon butts on the sides. The cornices are of white pine, with moldings and dentils. The linings of gutters and valleys and all flashings are of I. C. charcoal tin, leaders of corrugated galvanized iron.



SECOND STORY.

The wastes from plumbing fixtures may connect with the street sewer or cesspool, as circumstances may require. The chimney is of hard brick, laid in lime mortar up to the roof, in cement mortar stained red thence, with struck joints.

The side walls and ceilings are hard finished on two coats of brown mortar and well seasoned lath. The kitchen halls and bathroom are painted two coats; all other rooms are papered. The grounds about the house should be gently sloped, so as to carry all surface water away from the building, then sodded carefully, with gravel walks, etc. This building can be erected complete for about $2,000. D. W. KING.

Indications of Swarming.

"Is there any way in which to determine with certainty when a swarm is about to issue, except by taking out the brood frames and examining the queen cells?" was a question recently asked and answered in American Bee Journal.

Mrs. L. Harrison said: You can no more tell to a "certainty" when a swarm will issue than you can what verdict a jury will bring in. You may guess right sometimes, and again miss. Bees change their minds sometimes after their haversacks are packed for the journey.

G. W. Demaree answered: No; you can only guess when a prime swarm is likely to issue. No signal in the way of "piping" takes place except when after-swarms are about to issue. I notice every season that the colonies I expect early swarms from are not certain to be the first to cast swarms.

The editor said: No; it cannot be "determined" to a "certainty" when a swarm will issue—not even by examining the brook frames. There are indications upon which you can guess pretty nearly, but it will only be a guess.

TRANSPLANTING TREES.

Rules and Suggestions Which, if Followed, May Save Many Losses.

A general rule that will hold good in transplanting trees, shrubs and grape vines is to shorten and severely prune the parts that are to remain above ground. In taking up plants that have attained any considerable size, it is unavoidable that the roots will be broken more or less and large portions of them left in the ground. This makes it necessary to preserve a proper balance between the two parts by pruning the tops accordingly. In transplanting, whether in spring or fall, the roots should be spread out as well as possible without cramping them unnaturally, and spring planted trees in case of protracted drought may often be saved by watering them evenings, when without it they would die.

The following practical hints on this subject are from an address by Mr. Samuel Edwards before the Illinois Horticultural society:

Deciduous trees, the roots of which have become dry in transit, can in many instances be saved by burying the entire tree in moist earth for a few days.

The prolific cause of loss is the failure to properly pack and firm soil among the roots of the newly set trees. Fine dirt should be well packed in by hand and all roots covered several inches with it. Pour on a pail or two of water to wash dirt into all possible crevices. After ground settles fill in again, tramp and pound dirt firmly about the roots. Leave the surface soil loose, mulch with prarie hay, straw or other coarse litter to depth of six inches, extending a foot beyond ends of roots.

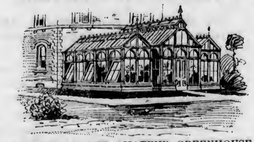
Neglect to mulch or frequent stirring surface soil, kills many trees, especially if they are daily deluged by water. In a season of protracted drought watering may be necessary. Dig a hole near the tree, water bountifully, then return the earth after water settles.

Wrap bodies of new-set trees with burlaps of any cheap material to shade from hot sun. In a hot summer, if this is not done, bark is often killed in spots on south or southwest side.

An Attractive Home Greenhouse.

The accompanying sketch of a greenhouse attached to a home represents one of the various styles of glass structures for amateurs, of frequent occurrence in England. Its advantages, as pointed out in Popular Gardening, from which the cut is reproduced, are that it is constructed to give the least obstruction to light and sun, with great strength and rigidity.

The plan provides, in fact, three separate houses within a small compass, thus suiting the glass to plants of varying needs. For instance, one part might be



A THREE IN ONE AMATEUR GREENHOUSE.

fitted with heating apparatus to insure a stove temperature; another part, say the larger, center one, for an intermediate house with a night temperature of from 55 to 65 degs., and the third to be a cool greenhouse.

Moreover, the design of the structure is decidedly pleasing, just as one should desire to have a greenhouse that adjoins the residence. And this is obtained without resorting to curves in the roof, a point that would tell when it came to paying the carpenter and glazier bills.

Spraying Cherries.

Country Gentleman tells that reports from different sources speak favorably of the experiments which have been made in spraying cherries with arsenites. Their early season to ripen and mature makes an early return from the labor; and their entire smooth surface—not even a calyx cavity—gives them an advantage of easy washing of all sprayed matter from their glossy surface, by the dash of rains. The fact that the curculio devours exterior matter as well as sucks the juicy interior, is corroborated by the success of spraying. It commonly happens that the cherry crop is much thinned by the long rains that occur in many localities while they are in blossom, preventing the action of the pollen; but this year was an exception, a long continued period of dry and clear weather occurring at that time, and the consequence was that the trees were loaded with fruit, and the heavy crops were well taken care of by spraying.

Black Knot.

Professor Goessman is credited with having checked the advance of the black knot on the plum tree by shaving it off the larger limbs, and then painting with a mixture of linseed oil and oxide of iron, in which he puts a few drops of carbolic acid. It seems to destroy the diseased growth and leaves the sound wood uninjured.

A New Remedy for Mildew.

A correspondent in the northwest sends to The Florists' Exchange the following, which, he says, is an efficacious remedy for mildew: "Take leaves of cedar of any kind, or leaves of any kind of evergreen, and boil them. Strain off the liquor and with it sprinkle the affected plants. If the decoction should be somewhat strong it will do no harm, and it will not injure the most delicate plants, while it is sure death to mildew and fungus of all kinds. The writer says that he was led to this important discovery by observing that whenever he found the wild gooseberry growing in a swamp containing cedars or other evergreens he never found any traces of mildew on the gooseberry. He first experimented on some gooseberry bushes in his nursery that were badly mildewed, and obtained most satisfactory results. He has since tried the decoction on verbenas, roses and several other plants with unfailing success."

Things Told by Horticulturists.

California Fruit Grower calls attention to Bassford's Seedling, a new cherry named for the owner of the tree which for the first time came into fruiting this year. The fruit has the flavor of the Black Tartarian, but is more of the color of the Royal Anne. The fruit is an early bearer.

Items for Fruit Growers.

An Illinois horticulturist claims that spraying transplanted trees in the evening during a dry time will often save them.

A fruit grower says that in the absence of any other fruit the curculio will work on the peach.

Grapes that have passed the summer in bags come out in the fall looking better than those exposed to the weather. The berries, being free from weather marks, present a fresh, green look, says a New Jersey grape grower.

A GENERAL TOOLHOUSE.

Accommodation for Large Farm Implements and the Small Hand Tools.

The leading requisite for a general toolhouse for the larger farm implements and machines, according to Country Gentleman, is to have it open on both sides, so that wagons, reapers, horse-rakes, sulky plows and everything drawn by horses may be driven in one side for shelter and out again on the other side for use. This will save much labor otherwise required to pack these machines away when driven in on one side only. Sliding or swinging doors may be provided, if required, to exclude wind, rain and snow. If the land is level it will be necessary to have all the places of entrance and exit on the same level, but with a descent or sloping surface the entrance may be above for such tools as are used on the higher fields, and the other entrance below opening toward the lower fields. But this arrangement will prevent the driving in on one side and out on the other.

The builder will ascertain by measuring his larger tools what will be the most economical width of the building, so as to receive them all without undue crowding. A portion of it or one end may be devoted to a workshop and the smaller or hand tools, which for convenience and neatness may be arranged and hung on pins at one side or over the work bench, in a manner represented in the accompanying cut.

ARRANGEMENT OF HAND TOOLS.

Instead of placing all the toolhouse on one level, says the authority quoted, the workshop may be on the next floor above, and the house thus occupy less ground, but the inconvenience of being compelled to go up a flight of stairs for every small matter will suggest the superior economy, on the whole, of a common level.

Manuring for Wheat.

A Missouri correspondent, writing to the New York World, says: One of the best plans of applying manure to wheat is to plow reasonably early after the harvest work is finished. Take pains to plow deep and thoroughly; then haul out and apply all the manure possible. Scatter it evenly over the surface.

The work of properly preparing the soil to receive the seed will usually work the manure sufficiently into the soil. There is usually very little time for hauling manure after the spring work fairly begins until after harvest, so that there should be a considerable quantity that can be hauled out and applied with profit.

If commercial fertilizers are to be applied, the most economical plan is to use the fertilizer attachment to the drill. The work can be done at less expense than in any other way. It can be scattered broadcast by hand, but this increases the work very materially. Manure or fertilizers with wheat should always be applied near the surface whether commercial fertilizer or stable manure is used. As it is difficult to secure a sufficient amount of stable manure to keep up fertility, it is a good idea to apply the stable manure to such crops as corn and grass and use commercial fertilizer with wheat and potatoes.

Set tulips five or six inches apart and about five inches deep.

Fall Plowing.

The land which is to be seeded to grass in August, or that upon which winter grain is to be sown later, will do better, says The American Cultivator, if plowed as early as time can be found to do it, and then given a working over with horse-hoe or harrow a few times, with short intervals between, before the seed is sown. It will greatly assist in rotting the sod if it is sward land, and the several cultivations will destroy vast numbers of weeds, and fit the soil as a seed bed, in which the roots of the young grain or grass will readily push themselves out in their search for food.

Improving a Poor Soil.

On this subject the New York World has the following to say: Buckwheat grows rapidly, and is sometimes used as a soil improver by plowing it under in the fall instead of harvesting it for the grain. There is, however, quite a general reluctance to plow under a green crop for its fertilizing properties, when by letting it stand a few days longer a remunerative crop of grain might be realized from it. Plowing under a green crop of any description is one of the ways for putting a soil into a good condition for the best results from the use of commercial fertilizers, and in the case of a poor field that is to be reclaimed the farmer must determine for himself the variety he can use most economically. Buckwheat plowed under in the fall, to be succeeded by rye plowed under in the spring, would furnish as much vegetable matter for the purpose as can be made available in the same length of time, and it simply becomes a question of sacrificing two crops as fertilizers when both are near maturity. As is well known, clover is the most economical soil renovator for the north, but a soil is sometimes so poor that clover itself needs fertilizing before it will grow to good advantage.

An Umbrella in the Apiary.

An apiarist writes to Gleanings in Bee Culture as follows: An umbrella to catch up and carry around with me whenever my hands are at liberty is one of my greatest comforts. On extremely hot days we always have them handy, and I often make use of them in swarming time to hive bees. Our queens are all clipped, but the swarms will sometimes cluster, and although I know they will return in time, I don't wait long, but take a few from the cluster and start them in. As our trees are mostly small, they can usually be reached from the ground or with a stepladder. I often turn my umbrella upside down and shake part of the cluster in it and take them to the hive where the queen is.

Agricultural Items.

According to one estimate the wool clip of America for 1891 will be 300,000,000 pounds.

Rye sown among corn at the last cultivation will choke down weeds, furnish late fall and early spring pasture, and supply a good coat of green manure to turn down for the following wheat crop.

The acreage of clover is returned as practically the same as that of the previous year.

Hyacinths may be planted six to eight inches apart and five inches deep.

Crocuses and snowdrops need not be more than two or three inches apart and the same in depth. Planting in clumps is an effective way to arrange them.

During the autumn the seeds of sweet alyssum, candytaft, larkspur, lupines, mignonette, portulaca, etc., may be sown. These will start up earlier in the spring, and will flower more freely than will spring sown ones.

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Commission Merchants are waking up to the value of the FARM AND VINEYARD as an advertising medium. This month we have Batterson & Co., Buffalo, N. Y., Gerber Fruit Co., St. Louis, Mo., J. A. Shea & Co., J. W. Stevens & Co., Minneapolis, Minn., Geo. Lester & Co., New York City, and Barber, Martin & Co., Chicago, Ill. All reliable firms who furnish the best of references. Before marketing your grapes, etc., it would pay you to write to one or more of these firms, and by so doing you would find out where there is the greatest demand for such fruit as you have to dispose of, thus enabling you to get the highest price for your goods.

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Devoted to Farmers' Organizations and Farm Topics.			
" N. Y. Weekly World, "	1.00	.50	1.00
" Cosmopolitan, "	2.40	.50	2.00
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BUILDING THE FAIR.

Busy Scenes at Jackson Park, the Site of the Columbian Exposition.

It takes a fence six miles long to enclose the World's Fair buildings. All these structures are to be of extraordinary dimensions, but the largest of them, on which the foundation work has just been commenced, will be something stupendous. It is the Hall of Manufactures and Liberal Arts. The site for this vast building is a broad, highly situated plateau overlooking the lake. A railroad track runs through its center, and on each side rise tremendous piles of lumber, iron and all sorts of construction material.

The big buildings are beginning to rise. Already some of the principal structures are not only in evidence, but progress on them is marked from day to day. Looking northwest from the Administration building the visitor sees the Woman's building, already so for advanced that it looms up imposingly against its background of park trees.

Rising in the vista are the Electricity and Mines and Mining buildings, on which the foundations are already completed. Upon the sites of the Horticultural and Transportation buildings all preliminary work is completed, and hundreds of tons of material are ready to be placed in position.

Hundreds of men are engaged on every possible sort of construction work. Laying water mains, electric light plant, modeling for the exterior decorative work and developing landscape effects around the ornamental waters.

A busy place indeed is the exposition ground, and soon it will be as busy by night as by day, for the electric lighting necessary for night construction has just been arranged for. From one end of the grounds to the other everything is pushed, and that, too, in all sections of the work. In the landscape system, which includes the lagoons, basins and ornamental waters, the breakwater and lake shore terrace, the great pier and casino; and even their minor divisions are being pressed forward with a business like ambition thoroughly in accordance with the impelling spirit of this gigantic enterprise.

The beautiful pictures, Christ before Pilate and Christ on Calvary, are still offered. Either picture and a year's subscription to this paper, for only 50 cents.

Pecan Culture in the South.

The Southern Horticulturist and Farmer, an elegantly printed and illustrated 16 page paper, devoted to horticulture, floriculture, poultry, bees and the home circle, will issue a special 5,000-copy edition on October 1st, 1891, devoted especially to Pecan culture in the south, by writers of authority on the subject. Send twenty-five cents for three month's subscription including this number, or $1.00 for a year. Address, WM. D. COX, Bus. Mgr, Southern Horticulturist and Farmer,
Bryan, Texas.

A $2,500 HOUSE.

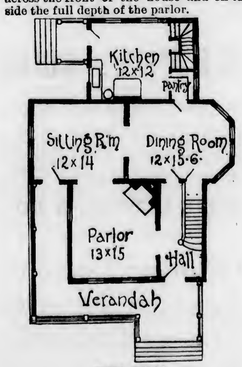
It Is of Artistic Design, Well Built and Conveniently Arranged.

[Copyright, 1891, by American Press Association.]

It does not follow because we are not rich we may not build a beautiful house. On the contrary, a greater effort should be made to proportion the parts of the design so as to get the prettiest effects by the outlines of the building, with little or no ornamentation. Simplicity is the keynote of success in architectural design and decoration. The illustrations here shown represent the plans and a perspective view of a conveniently arranged eight room cottage, suitable for a family in moderate circumstances. It is to be located on a plot of ground of not less than 50x100 in dimensions, and is placed some distance from the street so as to secure a good sized yard in front of the building, which in itself is always a pleasing feature. A cellar extends under the entire building. The foundation walls are of field stone or brick laid to a line on both sides in cement mortar. The piers which support the veranda and back porch are of brick.

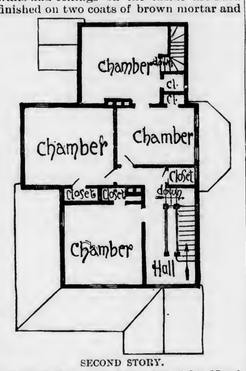
PERSPECTIVE.

The first story comprises a parlor 14x16 with a corner fire place, and is lighted by two windows in front and one on the side, and communicates with the hall and dining room by large openings which are provided with curtains, poles and rings at the top, to which suitable curtains may be attached. The woodwork about these openings is so constructed that folding doors can be substituted for the curtain arrangement at any time. Adjoining the parlor is the staircase hall, 17x16 in size, which communicates with the dining room by a hinged panel door at the back, and is entered from the veranda through an extra wide front door. The dining room, 12x16, is lighted by a bay window of the full width of the room—which gives a cheerful effect inside and an exceedingly picturesque appearance on the exterior. The dining room communicates with the kitchen through the pantry and with the sitting room through the large opening similar to the parlor. Underneath the front stairs is the china closet, fitted up with shelves and suitable drawers for cutlery. The sitting room, 12x14, opposite the dining room, gives the proper balance to the plan in appearance and convenience. A veranda extends across the front of the house and on the side the full depth of the parlor.



FIRST STORY.

A pretty porch over the front protects the steps. A sash door opens from the sitting room directly upon the veranda, which is a very convenient feature, especially for warm weather. Lastly is the kitchen (12x12) with back stairs to the second story and stairs to the cellar, with a closet for stores between the doors as shown. The pantry is conveniently placed and is fitted up with shelves in the usual way. The kitchen is provided with a sink and portable range without a brick opening. Two reasons may be given why this is preferable to the brick set range. First, it is cheaper, and second, it is cleaner. The kitchen is wainscoted 3 feet high to protect the walls. The outside kitchen door is also protected by a handsome porch. In the second story are four good sized chambers, with a closet for each, a large hall, back stairs leading to the kitchen and a flight leading to the attic, which is simply floored and the whole left unfinished. The building is of wood above the cellar, constructed with balloon frame, the walls sheathed with surfaced boards and covered with waterproof paper, and clapboarded on the outside, with the exception of the gables, which are shingled. The walls and ceilings on the inside are hard finished on two coats of brown mortar and



SECOND STORY.

seasoned lath. The floors are of dry North Carolina pine; all other woodwork, except the railing and newels of the stairs, is of white pine, painted two coats: all roofs shingled; linings of valleys and all flashings, leaders, etc., of I. C. tin; all exterior woodwork painted two coats.

D. W. KING.

Even Smaller Game.

Arabella—Is it true that Grace Stedley has eloped with her father's coachman?

Felice—Oh, no, she didn't do as well as that; he was only the footman.—New York Epoch.

Buckwheat in the Orchard.

Two or three growths of buckwheat can be grown in the apple orchard in a single season, says Field and Farm, provided they are plowed under without ripening seed. As the seed is not expensive, this may be better for the land than to raise only one crop and let it go to seed. There is not a great deal of plant food in buckwheat, therefore it does not rob the soil. Plowed under, buckwheat loosens the soil as few other crops do, and this on heavy land is often very important for apple and pear trees. The looser the soil the more water it will hold without hardening the surface, consequently buckwheat helps to prevent drought.

Waldo F. Brown says that for success in fruit growing more depends on the man than on the soil or locality.

H. M. Engle, of Pennsylvania, is credited with saying that premature ripening of peaches on a small branch or part of a branch is a sure indication of yellows, and that the tree should at once be cut and burned.

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BARNABY RUDGE AND CHRISTMAS STORIES,
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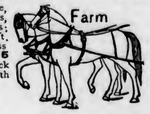


Libertyville Harness Co., Libertyville, Illinois.

Mention FARM AND VINEYARD.

A COVERED BARNYARD.

Professor I. P. Roberts' Plan, as Illustrated and Described by Himself.

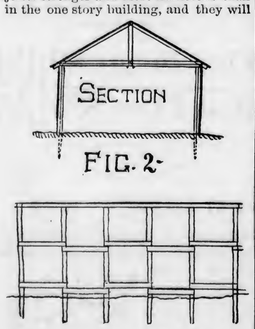
In a bulletin from the Cornell university experimental station on the production and care of farm manures Professor Roberts presents the plan here illustrated for a cheap, durable and easily constructed covered yard.

The accompanying figures (1, 2 and 3) show the ground plan and elevation of the frame. Long posts or poles, eight inches in diameter at the butt, are set in the ground two feet deep and six feet apart. Upon these are spiked 2 by 4 scantling about four feet apart for nailing girts, and a plate 2 by 6 is nailed on top of the posts, which have been previously sawed off to a line after the girts have been spiked to them. Round poles flattened at the ends, or 2 by 6 joists doubled, spiked to the heads of the posts, will tie the building together. Ten feet will be high enough for the story, and one story will suffice if no straw is to be stored above, except what is there placed to exclude the cold. A few rails laid on the crossties which bind the building together will sustain the weight of the straw, which will exclude cold and absorb moisture better than an expensive matched ceiling.

FIG. 1—GROUND PLAN OF COVERED YARD.

On the inside of the posts which have been set in the ground flattened poles or boards may be nailed horizontally, and the space between the outside vertical boarding and the inside horizontal boarding may be filled with straw. This kind of a wall is far drier and more comfortable for the animals than one made of costly stone or brick.

If it is desired to have a place to store straw the building should be higher, the joists stronger and more numerous than in the one story building, and they will all have to be supported by a timber supported by posts placed under their centers. The roof should be steep and can be made of any material which will shed water. When the posts which have been set in the ground have rotted off or are much decayed they may be sawed off even with the ground and supported by placing underneath each one of them a large flat stone. Whenever the building is treated in that way it will be necessary to brace it thoroughly. It might be well in a windy country to brace so wide a building at the start.



SECTION OF YARD—SIDE VIEW OF FRAME.

Such a building will be inexpensive and reasonably durable. It will serve as a place for depositing manure when needed; it will shelter the animals while they are being watered and the stables are being cleaned and aired and give facilities for preventing loss of valuable fertilizing material either by leacking or firing. In the second cut, Fig. 2 shows a section of the covered yard, while Fig. 3 in the same cut shows a side view of the frame without roof or rafters.

Crimson Clover.

Much is being written just now, says Henry Stewart, in praise of crimson clover (Trifolium incarnatum), an annual plant, which, sown in July, ripens its seed within a year. In May it is in perfect bloom and presents a brilliant view when evenly grown, the surface of the field being covered with the bright, varying red, from flesh color to deep crimson, upon a rich green ground of foliage. But beauty alone is not perfectly satisfactory to the farmer, and there is danger of misleading by excessive praise of this kind of clover.

The Demand for Flowering Plants.

Of the plants sold the demand in the northern and eastern states is greatest for geraniums, coleus, roses, pansies, verbenas, heliotrope, carnations, chrysanthemums, palms, ferns and fuchsias, nearly in the order named. In the south the demand is for roses, chrysanthemums, coleus, palms and ferns; while California shows the demand to be largest for roses, carnations, chrysanthemums, geraniums, palms and pansies. For cut flowers roses lead, followed closely by carnations.—Census Bureau.

Grasses for Hay.

Clover, timothy, orchard grass, red top and Hungarian or millet are the sorts most usually grown for hay. For feeding out on the farm with all classes of stock, red clover stands at the head. It can be sown in the spring on wheat or with oats or by itself. It grows rapidly and gives a good yield if the season is at all favonable. In addition to making a good feed, whether pastured or harvested and made into hay, clover is one of the best crops to aid in building up the fertility. Timothy is one of the best grasses for hay for horses, and if hay is grown for market timothy will return the best profit, as it sells at a higher price than any other kind.

Red top makes a good hay; it ripens after clover and timothy and is better adapted to growing on thin land than either of the others. It can be sown in the usual way. Orchard grass on reasonably good land makes a good growth and yield, the only objection being its inclination to grow in stools, but this can be avoided by using plenty of seed and securing a good even stand all over the surface. Hungarian or millet makes a good hay, especially for cattle or sheep, and on good rich soil, well prepared and in a favorable season, will give a large yield of hay. It is an annual and must be sown each year, and is not a profitable grass to grow on thin land. It can be sown the latter part of May or the first of June, and care must be taken to prepare the soil in a good tilth before planting.—Prairie Farmer.

CAPONS LARGE AND SMALL.

An Expert in Caponizing Tells the Advantages Arising from the Practice.

George Q. Dow, a recognized authority on such matters, writing to Western Stockman, says:

To raise the capons it is not necessary for the poultry raisers to confine themselves to any one brood. By performing the operation the same general result is produced with all breeds, that is, their size and weight are increased in proportion to the natural size of the breed. The quality of the meat is greatly improved in all breeds, becoming rich, tender, fine grained and high flavored, with an abundance of breast or white meat. The increase in weight which follows caponizing, as a general thing, may be reckoned at about 40 per cent. over and above what their natural weight would be. The full amount of such increase, however, is only obtained by allowing the capon to fully mature—obtain his full growth. This he will do in from ten to twelve months from his birth, and as a rule should be kept this length of time before marketing. The cost of his feed is but a trifle for the last three months, and he is just no trouble at all to care for.

Another important feature in the expense of raising capons is the fact that they are so hardy and so free from disease. I have never yet seen a sick capon or lost one from disease. I have had them take cold after performing the operation and become slightly inflamed and perhaps die, but very rarely, and a sick capon from any disease is rarely seen.

Some breeders will say: "I guess it's a good plan to caponize, but as I keep only Leghorns, and they are so small, it will not pay me to caponize them. If I had larger breeds I would do so." Now there is just where he makes a mistake, and his conclusions are incorrect. It will pay just the same percentage as it does the breeder of the bigger fowl.

Big capons are by no means in the greatest demand. In fact they are not so much sought after as small ones. A medium size is better. No family wants a capon of twelve pounds, but a large hotel may. The family trade prefer a capon that weighs seven or eight pounds.

I keep Plymouth Rocks and Light Brahmas, and find that either of these breeds make fine capons and a cross equally as good, but I do not believe in crossing anything. Keep every breed pure is my rule.

To Prevent Swarming.

"I once believed, as many do yet, that keeping the queen cells cut out would prevent bees from swarming," says an Illinois apiarian, in Gleanings in Bee Culture. "That faith received a rude shock when I found that bees often swarmed before they had started queen cells, sometimes not even starting them for two or three days afterward. This was with Italians. It is possible that, with black bees, the method could be made to succeed, although it is not at all practical. The objections are the great amount of labor required, and the great liability of overlooking one or more cells. If any are left they might as well all be left. The same objections apply to this method of preventing second swarms. I once received a communication from a man who had a new method of preventing afterswarming. He had the highest opinion of its practicability and value. He said it would be worth fifty dollars a year in every apiary of any size. I agreed to help him test it more thoroughly before he made it public and then he revealed to me the great secret. What do you suppose it was? Simply cutting out all queen cells but one as soon as a colony swarmed. Considerable correspondence, though, failed to convince him that it was not something entirely new and valuable and very likely he will be highly indignant at my revealing it now."

A Model Jersey.

The admirers of the Jerseys, and these are many, can hardly fail to be pleased with the very excellent likeness of

A FINE MODEL OF A JERSEY COW.

Sweet Secret, winner of some of England's most notable awards to this breed. She was calved in 1882 on the Isle of Jersey.

Sweet Secret, according to Mark Lane Express, from which our cut is a reproduction, is considered by many judges the best model of a Jersey cow to be seen at the present day.

The returns for the barley crop show a decided tendency toward enlargement of the area, consequent upon the prospect of better values.

Hay for baling must be more thoroughly dried than for common barn storage.

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A PRAIRIE HOUSE.

It Is Especially Designed for a Flat Country and Costs $1,800.

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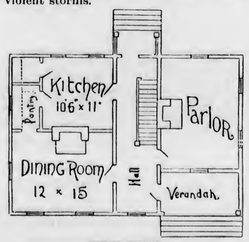
In a hilly or mountainous region like that of Switzerland, low and steep pitched roofs with wide projections of cornice, open timber work and picturesque brackets, windows, etc., seem especially suited to harmonize with the various features of the landscape. In the tropical regions open balconies and verandas, as a protection from the heat of the sun, are necessary constructive parts of a sensible design. The prairie house likewise must be built with a view of being suited to the climatic requirements. A prairie country being devoid of hills, mountains or thick forests is apt to be swept by fierce wind storms and

PERSPECTIVE.

sometimes tornadoes, and the structure must be constructed so as to withstand the shocks which it is liable to receive. A brisk wind travels at the rate of about twenty-five miles an hour, a strong wind at the rate of thirty miles an hour, high wind at forty, storm at fifty, violent storm at sixty, hurricane at eighty, violent hurricane at a hundred miles an hour. From this it will be seen that the wind pressure is an important item which must be carefully considered and calculated in designing any important structure. In a prairie country a high building or roof should be avoided, as it offers too large a surface for the pressure of the wind, which in a storm is about eighteen pounds to each square foot of surface, neither should the building have wide projections of cornices for the same reason, as it would be in danger of being unroofed at any time during a storm unless extra and expensive precautions have been taken in construction, It follows, then, that a low building with but slight projections of cornices is best adapted to a prairie country, as being most economical and safe.

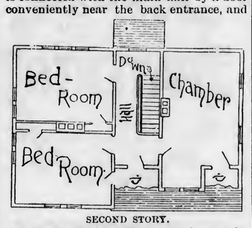
The cottage shown in the illustrations represents a sensible, conveniently arranged and substantially constructed cottage or prairie farm house in the Queen Anne style of architecture. The foundation walls are of brick laid in cement mortar, plastered on the outside with cement, and the cellar has a concrete floor three inches thick. The sills are built of two pieces of plank, one, 3x6, laid flat upon the walls and securely anchored in place by wrought iron bolts set in the brick work, the other piece, 2x8, is set edgewise upon the wall and securely spiked to the plank beneath. The studding is notched on the lower end to come flush with the outside of the brick wall and sill and spiked to both pieces, thus securing the framework of the entire building from being torn from its foundations by the most violent storms.



FIRST STORY.

The framework should be hollow, with tongued and grooved sheathing nailed on diagonally. In the cottage shown the sheathing was covered with waterproof building paper and clapboarded with six inch beveled siding. The roof is also sheathed and covered with waterproof paper and shingled. Shingle lath should never be used in regions which are frequented by high winds, as the shingles bend under the pressure of the wind between the laths, and the rain or snow is driven into the building.

The building is one and one-half stories in height. The main roof over the second story chamber extends down over the front of the parlor, thus forming in a most economical manner a small veranda which protects the front entrance. If desired, in the winter time this porch could be inclosed with glazed window sash as an additional protection. The staircase hall extends through the middle of the building, with a door at the rear leading to the yard. Upon the right of the staircase hall is a parlor 12x16, lighted by a window in front and rear, and two windows in the sides. It is heated by a grate designed for burning soft coal—or it is so arranged that a stove can be used if desired. In the front, at the left side of the hall, is the dining room, 13x15, with windows in front and on the side. It is also provided with an open fireplace and grate for burning coal The dining room communicates with the kitchen through the pantry. The kitchen is connected with the main hall by a door conveniently near the back entrance, and



SECOND STORY.

is abundantly lighted by two large windows. In addition to the pantry the kitchen is provided with a large store room—an essential feature, especially in a farmhouse. It is also fitted up with a portable range and suitable iron sink. In the second story are three good sized chambers, with a closet for each. At the front of the hall in this story is a large closet which may be used as a trunk room or linen closet.

The side walls and ceilings throughout are hard finished on two coats of brown mortar and lath. The steps and risers of the stairs are of yellow pine; newels, rails and balusters of ash; all other woodwork of white pine; all painted in two coats—both exterior and interior. This building can be erected, under favorable circumstances, in a thoroughly substantial manner for $1,800. If a bathroom is desired the extra plumbing, cesspool, etc., would cost about $900.

RALPH R. RAYMOND.

Killing Sorrel.

Salt will kill sorrel very easily, while it will only make the grass grow more and faster. A practical man says: "I have whitened the gravel walks on my lawn in which sorrel came in thickly (with the gravel) with salt, and killed it out at once. I learned this about fifty years ago when my father cleaned gravel walks with it, and it cleans them to perfection, killing any weeds and brightening the surface wonderfully."

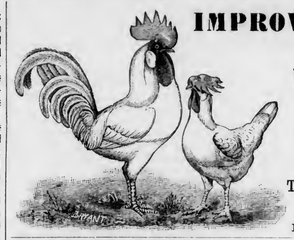
Floral Hints.

If plenty of geraniums are wanted during the winter the flower buds ought now to be picked off and the plant pinched back to make a stocky growth.

The planting of bulbs, such as tulips, hyacinths, etc., may be done any time during the months of September, October and later, provided the ground remains unfrozen.

It is stated that seven-eighths of the grapes of California go to the wine press.

Nurserymen have used kerosene emulsion largely in destroying the black louse on cherry trees.



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A Cheap and Comfortable Dwelling for a Small Family.

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The cottage here represented is designed to meet the requirements of a small family in an interior town or the suburbs of a large city.

The cellar extends under the front portion of the house, the remaining part being unexcavated. In this way considerable expense is saved, as the foundation walls in the unexcavated portion need only extend in the ground below the depth of frost. The cellar is excavated to a depth of 6 ft. 6 in. in the clear.

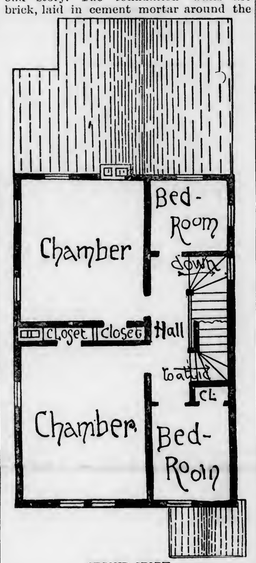
PERSPECTIVE.

The first story comprises a parlor 14x15 in dimensions, a dining room 12x15, with kitchen extension 12x12, pantry, closets, etc., complete. The roof of the kitchen extension extends over the back door, forming a veranda, which shelters it from storms and sun. The front entrance is protected by a neat porch. The front door leads one through a small vestibule, which in the winter time is a desirable feature, as it prevents cold draughts from blowing directly into the hall. The staircase occupies the full width of the hall. Back of the parlor is the dining room, 12x14, with a good sized pantry, which shuts off this room from the kitchen. The door opening to the cellar stairs and the china closet occupy the balance of the space on this side of the room. A chimney with an open fireplace and grate for burning coal and a neat mantel, and glazed tile hearth complete,

FIRST STORY.

forms an attractive feature of this room. The parlor is intended to be separated from the dining room by portieres. The parlor is lighted by two windows in front and one on each side. The window on the side is placed well back from the front of the parlor so as to leave room for a piano, a matter which is too often overlooked in planning a dwelling house.

The kitchen is of good size, well lighted, and is provided with a closet for stores, a cast iron sink and portable range. In the second story are two good sized chambers, two small bedrooms and three closets—all in the main building. The small bedroom in the rear can easily be changed to a bathroom at any time when desired. There is a small attic suitable for a trunk room in the roof above the rooms in the second story. The foundation walls are brick, laid in cement mortar around the



SECOND STORY.

cellar and above the ground. The walls in the trenches where the cellar is not excavated are laid dry to within one foot of the top of the ground. The frame of the building is of spruce, with the outside walls, gables and roofs sheathed with surfaced hemlock and covered with waterproof sheathing paper, and shingled from the foundation to the ridge of the roof. The building is heated by stoves. The cost of this house, without papering the rooms, is about $1,500. RALPH R. RAYMOND.

Salvias.

For large conservatories, in their season, salvias are most valuable. Young plants stuck this spring must not be starved. As they grow, a few pinchings will be needful to keep them in fairly good shape and to regulate the growth. I have found that nearly all loam, and that not of the lightest, will grow these plants well. In richer soil too vigorous a growth is made, which is not eventually so free flowering. Full exposure to the light and air is needful to obtain short jointed growth. Overpotting should be guarded against, particularly so in the case of the autumn and early winter kinds. The spring varieties will require pots a trifle larger; of these nothing surpasses the fine old Gesneralike salvia (Salvia gesnerifolia).

The general answer to the perplexing question, "How often ought I to water my plants?" given by William Saunders, is: Never apply water to a plant until it requires it—that is, until it is dry, and then apply a sufficient quantity to saturate the soil, which will be indicated by the surplus passing through the drainage.

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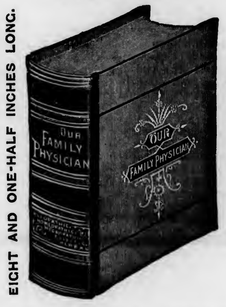

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THIRD. In its directions for treatment it is not confined to the practice used by any **one** class of physicians; but it gives, **separately,** and for each disease, the methods used by each of the different "schools" of medicine; and in all cases the prescriptions are made by the most eminent men in their respective modes of practice. This makes the work especially suited to the needs of every family, no matter what "school" of medicine they prefer.

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Besides this, there are three chapters in the work which are worthy of special mention, namely, those on "Diseases of Women," "Diseases of Infants" and "Care of the Sick."

The first of these is a model of its kind. It is chaste in language, contains no disgusting pictures for children to happen on and be over curious about, and taken altogether is the most practical, sensible and straight-forward treatise upon this delicate subject that has ever been printed.

This chapter alone is worth many times the cost of the book to every mother, even if it had been purchased at its regular price.

The other chapters referred to are equally well written and valuable.

But we need not further enlarge on the merits of the book. We have said enough to substantiate our claims that it is different from all similar books, and to show that is well worth having. By special arrangements with the publishers we are enabled to send **this book** by mail or express prepaid for only **$1.25.**

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HARDY STOCKS FOR THE CHERRY.

Two Native Cherries Recommended as Excellent for Budding.

That we now have varieties of the cherry from east Europe hardy enough for the north is beyond all doubt or dispute; but, as stated by Professor J. L. Budd in an address before the Minnesota Horticultural society, when worked on the commercial stocks they are liable to be lost by root killing. Professor Budd says: "It will prove best to grow them from root cuttings; but at present trees on their own roots are scarce, and I believe that we can profitably use two of our native species. The wild red cherry (Prunus Pennsylvanica) has proved an excellent stock for budding. Trees now several years old have not outgrown the stock, and the union seems perfect. The dwarf mountain cherry (Prunus pumilla), as seen in its native haunts, does not appear to be well adapted for use as a stock. But we find the seedlings to be upright in habit and to bud as well as the Mahaleb. The plants can be grown thickly in nursery and set out the succeeding spring in rows for budding, precisely as practiced with Mahaleb. At present I think this will prove the favorite stock for the whole north and extreme northwest for the dwarf varieties of the race which unite perfectly with its wood.

The Tomato Eggplant.

Professor Bailey, of the Cornell University Experiment station, in a bulletin devoted to the various species of eggplants, as tested at the station grounds, describes the Tomato eggplant here illustrated. He says, regarding this so called novelty:

It is sold as the Chinese Scarlet and Ornamental eggplant, and it is probably the one which has been lately distributed as a great novelty under the name of Tomato eggplant. It goes under the name of Solanum coccineum. Its nativity appears to be wholly unknown. It is probably African. I have called it the Ethiopian eggplant.

THE TOMATO EGGPLANT.

It is a coarse plant, three feet high, with large lobed leaves, and the stems, petioles and midribs armed with strong and very sharp spines a half inch long. The small white flowers are usually borne in clusters of two to six. The fruit is small, rarely much exceeding two inches in diameter, bright scarlet or yellow and conspicuously lobed, after the manner of the old Early Red tomato.

It has the general habit of growth of the ordinary eggplants, more compact, if anything, and easy to fruit. The species is only curious and ornamental, the fruits not being eaten.

It is generally conceded that a tough sod is injurious to the orchard.

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FRUIT AND FLOWERS

PEACHES IN BAD SEASONS.

Opinions Expressed by Western New York Horticulturists.

At the annual meeting of the Horticultural Society of Western New York, a subject discussed and reported upon as follows, was: "What varieties of peaches have given crops in past unfavorable seasons?"

Mr. Hopkins, of Lewiston, reported Smock as doing most favorably.

Mr. John G. Glen had one tree of Early Rivers which had given a good crop five years in succession.

Mr. Dutton, of Youngstown, had a full crop of Early Rivers.

Mr. Bronson, of Geneva, reported favorably of Salway, Early Rivers and Hill's Chili.

Mr. Willard had Hind's Surprise which did well; follows Early Rivers in ripening: is freestone, and does not rot. The old Hill's Chili did remarkably well. Melocton did well; produces a crop every year, and hardy in fruit buds—a very important thing. He thought a great deal of Horton's Rivers, a seedling of Early Rivers, and absolutely freestone.

Mr. Rupert said Wager did well; but some one else said it was almost worthless; while Mr. Snow stated that he would not plant it. Replying to a question Professor Bailey said no peach was absolutely free from the yellows.

Mr. Foord, of Auburn, spoke of Garfield as a fine grower, fine fruit and quite hardy. Mr. Willard considered the Garfield one of the best, and Professor Bailey said it was being planted a good deal in Delaware.

Mr. Bronson reported Wager uniformly good as Geneva; fine quality, good bearer, does not overbear and is the best canning peach that grows. He thought the gentlemen who spoke unfavorably of this variety did not have a genuine stock.

Mr. Smith, of St. Catharines, thought Wager fine, and Mr. Hoag agreed. Mr. Green said the original Wager was fine; but the story went out that it could be reproduced from seed, and seedlings have been sent out and the buds taken from them. Mr. Bogue had Wager, but the buds were not taken from seedlings. Mr. Hooker set out some seedlings and they proved poor.

Mr. Benjamin Wing said Alberge was raised in Georgia. It resembled Crawford, but is a little longer, is yellow and a freestone, bears shipping.

Mr. Snow asked if curculio is much of an enemy of the peach. Mr. Hopkins thought the past season the first time he had noticed it work any detriment in orchards. He found the yellow peaches preferable in his locality.

The Magnolia for Winter Forcing.

The magnolia as a winter forcer is not generally known, and yet a German writer tells that it is comparatively easily managed. Plant in fall in the open ground of temperate house only plants with buds and root bulbs, which will flower by January. Planted in pots or tubs they will answer readily likewise, but do not expose to too much heat. The plants will not suffer much by forcing if due attention is given them after flowering. The flowers are good keepers, and can be used to advantage as well as a cut flower or a decorative plant.

Early Cultivated Orchids.

Among the ornamental orchids that require cool or intermediate temperatures, the lycasts are regarded as the most easily grown. For beginners in this branch of gardening, according to American Garden, there are certainly none more suitable. Not only are these

LYCASTE HARRISONIÆ, VARIETY EBURNIA.

kept healthy with little trouble, but their flowers are borne in abundance, and as the old foliage remains until the new growths are completed, the plants always present a handsome and leafy appearance.

Lycaste Skinnerii is par excellence the orchid for beginners, standing a dry atmosphere better and remaining longer in bloom than others. Other desirable species in this genus are L. aromatica, L. Barringtoniæ, L. Deppei, L. tricolor and L. cruenta. L. Harrisoniæ, depicted in the cut reproduced from American Garden, differs in some respects from the previously mentioned species. The illustration represents the finest variety of it that is known; it is named Eburnia. The flowers are three inches across, with oblong sepals; the petals are ivory white and waxy in texture; the lip is large, the side lobes being erect and the color primrose, yellow and white.

Worthy of Note.

An experienced florist says: "If I were restricted in my gardening operations to the use of four species of plants, then without hesitation I should choose hardy roses, lilies, rhododendrons and clematis."

At a meeting of the Southern California Horticultural society, the native California flowering pea (Lathyrus splendidus) was spoken of as one of the most beautiful of native flowering plants.

Pruning the currant may begin at planting by shortening the last year's growth nearly one-half. The annual pruning ought to be done before the buds start in the spring.

The value of American vines as a means of restoring the French vineyards injured by the phylloxera gains each season additional evidence.

To prevent the laying of eggs by the peach tree moth some orchardists press a mound of earth about a foot in height around the trees. Great things are claimed for this method.

The Brunner is a rose in much favor around Boston, and at present is grown to a very great extent.

The lower half of the state of Florida is adapted to the growth of cocoanuts, and it is announced that the growing of this fruit is likely to prove a valuable industry to the state.

Men that know say that an experienced orchardist buys but few varieties of trees and vines, but that the novice buys everything of which he ever heard.

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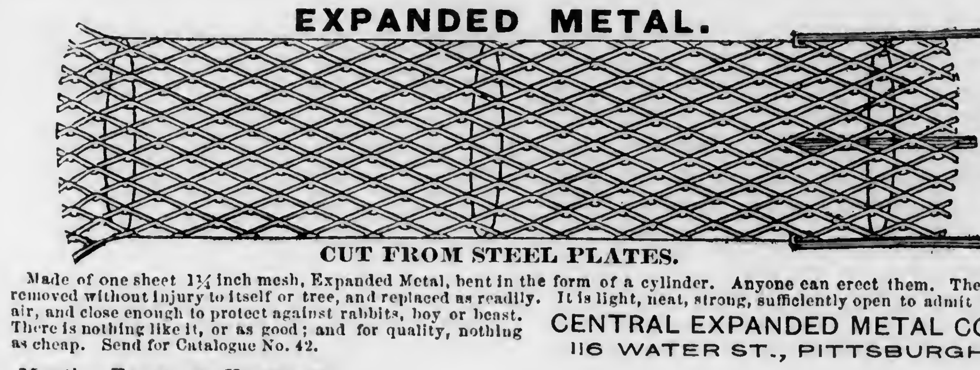

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A book on diseases of domestic animals, which should present a description of each disease and name, the proper medicines for treatment in such condensed form as to be within the means of everybody, has long been recognized as a desideratum. The work before us appears to cover the ground completely. The information is arranged so as to be easily accessible—an important consideration. Each disease is first described, then follows the symptoms by which it may be recognized, and lastly is given the proper remedies. The different medicines employed in all diseases are described and the doses required are given. The book is copiously illustrated, including engravings showing the shapes of horses' teeth at different ages. An elaborate index is a valuable feature.
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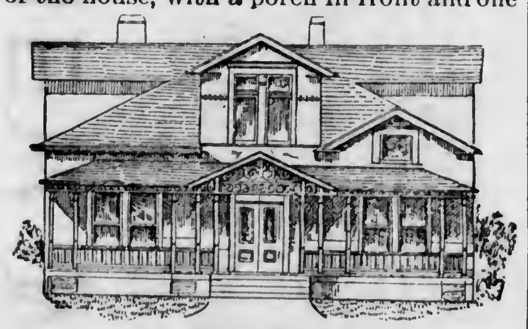
A SOUTHERN HOME.

It Would Be Comfortable and Attractive, However, in Any Latitude.

[Copyright, 1891, by American Press Association.]

It may not be true that a house suitable for the northern states is also suitable for the south, but it certainly is true that a good house for the south is equally good for the north. Here is a building with a hall twelve feet wide through the middle of the house, with a porch in front and one



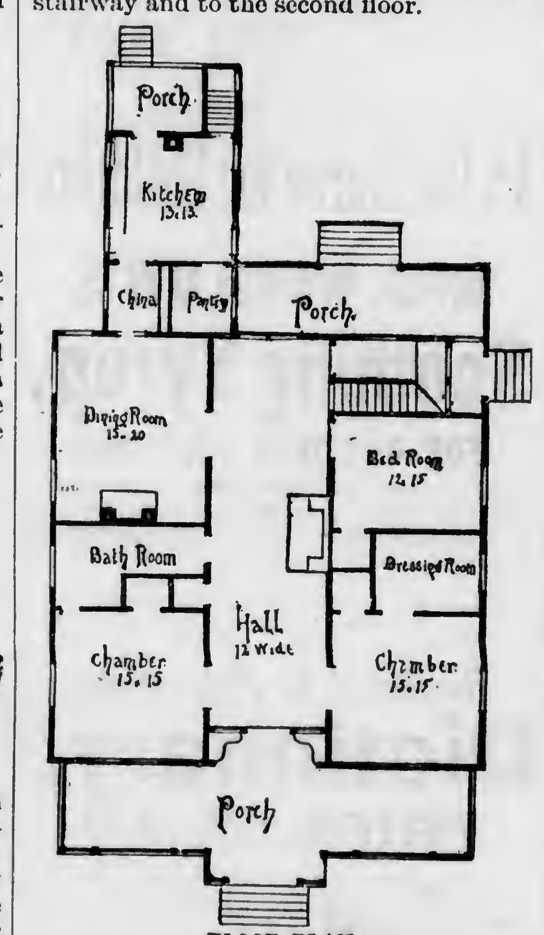
ELEVATION.

in the rear. Rooms are arranged on each side. Such a plan as this would be as comfortable as possible during hot weather. This would bring it to the attention of any section with warm days and nights. The north suffers quite as much in hot weather as the south, but the southern people know how to conduct themselves during the heated term. It is the habit of the people of the north to do about the same during the summer months as in the winter. Their business is tuned to the same key, and all of their affairs move in about the same way. In the south it is not expected that the same amount of energy will be expended during the very hot months as during those which are cooler.

A house like this, with trees in front and at the side, would be comfortable in any latitude. In the winter months it would be pleasant to sit around a large fireplace in the hall, which would serve as a sitting room. This hall is 44 feet long and lighted from each end. The bedrooms and bathroom connect with it. There is a hallway in the rear which connects with the stairway and as well with the porch outside. No special sitting room is indicated in this plan. The room which has the dressing room attached to it at the right hand side of the hall could be used either as a sitting room or parlor. However, it is to be presumed that in the practical use of a house of this kind the hospitable character of the hall would lead all to use it both as a reception and sitting room.

I have in mind a house planned in this way where the front and rear hall was separated by a spindle work screen and silk draperies. One end was a sitting room and the other a reception room. If a lady is in the rear end of the hall with her children and sewing and a caller appears, she steps into the front end of her hall and is practically in her parlor. If it is a formal call she is only disturbed from the routine of her work for a short time, and then can readily return to it.

The rear stairway may be used to connect with the room in the high part of the roof on the second floor. These rooms are quite as high and altogether as well ventilated as those on the first floor. The pitch of the roof over a broad house of this kind leaves a very high space in the center, and provides a room with an attic space over it. This would give two large rooms and ample closet in the front part of the second floor. If it were so desired there could be rooms over the kitchen, or, as indicated by the elevation in the dormers, at the side. By the use of these dormers rooms quite as high and as large as those in the middle can be provided. In case of there being rooms over the kitchen they could be entered by a stairway running up over the cellar stairway, which could be reached either from the porch or the kitchen, according to the latitude in which the house was built. If these rooms were approached from the kitchen it would be best to set the kitchen flue on the right hand side of the kitchen, so as to admit of a doorway next the cellar stairway. Thus the rear stairway would wind up over the cellar stairway and to the second floor.



FLOOR PLAN.

The kitchen and pantry arrangement of this house is particularly adapted for a southern house, though it is for that reason such an arrangement as would be appreciated in the north. The kitchen has cross ventilation and is well separated from the front part of the house. The way to get from the kitchen to the dining room is through the china closet or butler's pantry. In passing from one room to the other one must pass through two doors which are hung on double spring hinges. They always stand closed when released. With such an arrangement one may cook onions or cabbage in the kitchen without its being known in the front part of the house.

The pantry is on the opposite side from the china closet and has a window opening to the porch. Under this window could be placed an ice chest, and if the window is low enough and properly arranged, the ice can be put into it from the outside. Next to the ice chest can be located the dough board, on the top of which board can be placed a marble slap. This marble slab is a great saving of labor. It is easily cleaned and is much better for molding purposes than a board. On the dead wall side of the pantry are the shelves, flour bin and store boxes of the pantry.

The kitchen is provided with the usual labor saving arrangements—the sink with hot and cold water, drain connections and tables on each side. Every range should be provided with a hood over it, or rather the range should be almost surrounded with a hood. By such an arrangement most of the heat and all of the odor of the cooking goes to the outside. A house built on this plan in wood will cost from $3,000 to $3,500.

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WHAT STRAWBERRIES TO PLANT.

A Brief Report of the Newer Varieties Tested This Season.

Each spring and autumn the query is what varieties to plant. It is very difficult to give a list of varieties that will be equally suitable for all localities. Differences in soil, climate and manner of cultivation should be taken into consid-

MRS. CLEVELAND—IOWA BEAUTY—BEEBE.

eration, also the purpose for which they are grown, whether for market or home use. For market purposes Crescent, Captain Jack, Wilson and Manchester have proven in many localities the most satisfactory of the well tested sorts. Among the newer sorts Bubach, Pearl, Haverland, Crawford, Warfield, Jessie, Monmouth, Ohio, Daisy and Gandy have been found promising. It is best for those who grow strawberries for market to test a number of the leading sorts in a small way and plant most largely of those best adapted to their locality.

Following are extracts from Orchard and Garden's report on the new strawberries which are attracting special attention:

Mrs. Cleveland is truly democratic, and is so attractive as to at once arrest one's attention among acres of others. The plant is simply perfection; the berries of good size, form and color, and the variety is decidedly prolific.

Iowa Beauty, so far as beauty, form and color go, excels. In quality it equals its good looks, and the plant is a good though not strong grower and an abundant yielder.

The Beebe is supposed to be a seedling of Miner's Prolific. The plant is a heavier and stronger grower than the Miner and resembles it only in the form of the leaf and its freedom from disease, being invariably clean, bright and beautiful. Its berries are unlike the Miner in color, being bright scarlet crimson, are uniformly very large, produced in greater profusion even than by its supposed parent, and possess the same mild, rich, pleasant flavor.

Lovett's Early is an improvement upon both the Crescent and Wilson, from which two varieties it has undoubtedly descended.

For beauty, yield and mild, pleasant flavor, it will be a long while before a superior will likely be found to Parker Earle. Shuster's Gem for the home garden is a success. As a market berry its only weakness is its lack of firmness.

Lady Rusk has proved neither a decided success nor a decided failure. Jocunda Improved is a fine and attractive berry.

In the cut a fair idea of the shape and general appearance of three promising berries is given, Fig. 1 representing Mrs. Cleveland, Fig. 2, Iowa Beauty, and Fig. 3, the Beebe.

A New Rose.

It is not often that Germany offers a novelty in roses, but German florists have placed on the market a new hybrid tea rose, to which has been given the imposing name of Kaiserin Augusta Viktoria. The plant is described as vigorous, with only erect strong shoots, with few strong thorns, giving it a well trained and pleasant appearance. The foliage, when young of brownish red, turns a dark glossy green. Each shoot bears one, sometimes two or three well filled, cup shaped flowers, showing an orange yellow in the center, which is surrounded by cream yellow petals, which turn cream white on the outside and recurve gently.

One Way of Starting a Lawn.

A successful plan in making lawns is said to be to sow down in August, adding about two pounds of turnip seed to the acre. The gradual growth of the turnip foliage forms a congenial damp shade for the vegetation and spread of the young grass plants. The large leaves of the vegetable also protect the grass from early frosts. Their gradual decay and removal are effected before the grasses are so far advanced as to be hurt by continuous shade, and a thick sward is secured before winter.

Horticultural Items.

The American Pomological society will hold its twenty-third session in Washington Sept. 22-25 next.

The Delaware Fruit exchange has been revived.

Old fushcia plants for next winter's blooming should be cut back and repotted in fresh soil.

Heliotropes should be kept shapely by frequent cutting back.

Currant cuttings should be made and set in August or September, so that they may get started before the soil is chilled by the cooler weather of autumn.

A big plant show is announced to be held in Madison Square Garden, New York, next November.

Cut away the fading flowers of all plants.

The annual phloxes are most effective in masses.

American Nurserymen.

At the sixteenth annual meeting of American nurserymen the following officers were elected for the ensuing year President, J. Van Lindley, North Carolina; vice president, W. J. Peters, Ohio: secretary, C. A. Green, New York; treasurer, G. A. Whiting, Dakota. Executive committee: W. F. Heikes, Alabama; W. C. Barry, New York; J. G. Carpenter, Nebraska. The next meeting is to be held at Atlanta.

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NEW MUSIC BOOK.
On the first day of May we shall place on the market Professor CHARLES F. ESCHER'S NEW BOOK, entitled
OUR HEART'S DELIGHT; or, Sweet Melodies of the Past and Present,
being a compilation of vocal and instrumental music, adapted to piano or organ. The work will contain the best and most popular selections of the renowned authors of this and foreign countries. 32 full-page lithograph portraits of famous vocalists, instrumentalists and composers. Nearly 450 pages. Size 10 x 12 inches. Durably bound in cloth, stamped with appropriate design. This work is especially intended for musicians who desire a variety of choice pieces. Contains plenty for the beginner, and a good supply for the inexperienced. Over 4000 advance orders already received. AGENTS WANTED in every town to begin May first. We guarantee satisfaction, and refer you to Dun's or Bradstreet's agencies for our responsibility. Goods on 30 days' credit. For special terms, etc., address
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And American Gardener's Assistant.

VOL. 5. NO. 6. ERIE, PA., OCTOBER, 1891. FIFTY CENTS A YEAR.

Different Kinds.

BY N. J. SHEPPARD, Miller Co., Mo.

For the FARM AND VINEYARD.

Where the products of the farm are fed out to the stock on the farm, grass, both for pasturage and hay, is an important part of the farm crops, so much so that in many cases from one-third to one-half the acreage can be seeded to grass to an advantage. In many cases, however, in order to handle to a good advantage, it will be found a good plan to use two or three varieties, rather than to use only one. One of the essentials in having hay of a good quality, is to be able to harvest in good season. If cut too early there is too much water, and in consequence the hay is light and does not contain a good per cent of nutriment. If allowed to get too ripe more or less of the plant will turn to woody fibre, and there is a loss of nutriment.

In order to handle economically, and at the same time get the work done in good season, it will be a good plan to sow two or more varieties Orchard grass and red clover usually come in first, and can nearly always be cut and stored away before wheat harvest. Mammoth clover comes in a little later. Timothy is usually ripe by the time wheat is harvested and out of the way, and red top will ripen after timothy. These make a good selection, and in ripening after the others will lengthen materially the season of harvesting.

Any of these if cut at the proper time and rightly managed will make a good quality of hay, and in many cases lengthening the season will lessen the cost of putting up, as the farmer can do a large part of the work without the necessity for hiring extra help.

When the farm profits are small every advantage must be taken to increase them, and one important item in doing this is to lessen the cost, and this can be done to a good advantage in a majority of cases by planning the crops so that they can be handled with as little extra help as possible, and with the crops grown for hay this can be done to a good advantage by grassing a variety of crops for hay.

We are still offering the premiums previously offered. Don't you think you could get us a club if you tried.

SPECIMEN GERANIUM.

Harvesting Grapes.

The grape harvest has become a matter of no slight importance in this country, especially in certain localities favorable to the growth and maturity of that luscious fruit. Along the Hudson River, along the shores of the beautiful inland lakes of New York state, along the shores of Lake Erie in western New York and in northern Ohio, along the shores of Lake Michigan in western Michigan, and in some parts of California, large areas are planted with the vines, and hundreds of thousands of tons of grapes are annually harvested. Every year, we think, there is an improvement in methods of picking, packing, handling and shipping, and yet there is room for considerable more improvement.

1. The grapes should be suffered to hang until fully ripe. It is not enough that they hang until colored; they should hang until translucent. The experienced picker can tell when that is the case without spending much time examining a bunch. Then the bunches should be cut from the vine, put carefully in the picking tray without bruising, taken to the packing house, all decaying, unripe or imperfect berries removed from every bunch with scissors, and then the bunches packed in baskets holding five or ten pounds and honestly holding that weight. It does not increase consumption for the consumer to find that what he purchased for a five or ten pound basket holds but little more than four or eight pounds of fruit. Consumers resent all such petty deceptions more than they do high prices. Grape growers should unitedly and forcibly protest against careless handling of baskets by railroad and steamboat employes, draymen, and all others employed to handle them. Consumers, in many instances, find the berries near the bottom of the baskets mashed and decaying from the effects of dropping the baskets or setting them down heavily. They should also join in the united protest against retailers putting the retail price too high, thus diminishing consumption. Planting the vine is extending so rapidly that all legitimate means should be employed to increase consumption.—*P. C. Reynolds in Rural Home.*

INV. '60

The Gardener's Assistant.

A Paper on New and Promising Small Fruits.

Read before the American Pomological Society, at Washington, D. C., on Sept. 22, by MR. J. T. LOVETT.

For the FARM AND VINEYARD.

The subject may justly be considered a dry one. The horticulturist, however, like the scientist in other fields, never grows weary of his work; to him his studies never become monotonous and uninteresting, for the love of a true lover of fruits feeds upon its own growth; more thoroughly and fully absorbing his thoughts and time as years pass by. To him the mere description of many novelties is the most interesting *fiction* of the day. Then the pleasure of obtaining and setting the plants, watching the young sprouts put forth, the unfolding leaves, the opening blossoms, and at last the crowning joy of beholding the perfected fruit of a new and distinct creation is beyond the power of words to express.

New and promising small fruits may in some respects be compared to human beings. There are men you know who make promises freely—who are full of promise, so to speak; but rarely do anything else. We have them among the small fruits. Then there are ladies known as fickle. For a season they will smile upon you beautifully, causing you to be unspeakably happy in their lovliness; when of a sudden they change and leave you to the cold mercies of the world. These we have among the small fruits also. On the other hand there are the solid men of the day. They make no special fuss about it, but when you come to make a report of their acts you will find them performing their part well, each and every time.

In attempting to give notes upon the new and promising small fruits one is puzzled to know what standard to adopt; whether to include all that have been recently announced as promising or only those that have come under the essayist's personal observation and have in his estimation proved worthy a place under that caption.

Fearing the list might prove too long were the former method pursued, I have in these notes adopted the latter, for the crop of novelties this year is in keeping with the great abundance of fruit. Beginning with the season we have, first—

STRAWBERRIES.

Cloud or Cloud Seedling (Pistillate) is a variety of much value to the market grower by reason of its earliness, firmness and productiveness. The fruit is not large enough nor good enough in quality to satisfy the amateur. The plant is excellent, being a strong and vigorous grower and very enduring. Especially valuable to the southern grower for shipment north.

Michel's early, known also as Osceola, is still earlier than the Cloud in ripening and the plant is likewise enduring and free growing. With me, however, it has not been so firm, is smaller and less productive. Still it is valuable on account of its extreme earliness.

Lovett's Early is, I think, worthy of mention.

Lady Rusk (Pistillate) gives satisfaction in yield and the fruit is exceptionally firm, although of inferior quality. The plant with me is of a moderate growth and evidently requires deep, rich soil. Under such conditions it would undoubtedly prove an exceedingly profitable variety. In this connection I would name Shuster's Gem.

Jucunda Improved is an improvement in plant upon the celebrated Jucunda or Knox's 700. It is a strong and vigorous grower even upon sandy loam, yielding good, though not heavy crops under ordinary culture. The fruit, in all respects, resembles closely its illustrious parent. While speaking of fine strawberries I wish to mention the Crawford. Very few indeed can vie with it upon the exhibition table, or in fact upon any table, for it is as good as it is large and beautiful. Beyond doubt the gladiflora species enters largely into its make-up, hence it demands high culture and heavy soil. Otherwise the plant is of contracted growth and the yield moderate.

The Yale in a general way resembles the Crawford, although the fruit is firmer and not so large. The plant is of stronger growth and with me is peculiarly succeptable to attacks of the fungus upon the foliage known as "rust."

Louise is another exceedingly fine variety for the amateur, being very pretty and of surpassing excellence in quality. It also demands high culture, otherwise, with me, it is a decided failure.

Edgar Queen (pistillate) has, I think, a bright future. In plant and fruit it closely resembles the Sharpless. It is, however, very much more productive than that valuable variety. It also ripens its fruit better.

Eureka (pistillate) is another variety of the Sharpless type. The berries are not so large as the Sharpless, but are more uniform in size and shape, firmer and produced in much greater abundance. The plant, although a vigorous and good grower, is not so strong as its supposed parent.

For vigor of plant and productiveness I have found few varieties that equal the Mrs. Cleveland. It is pistillate and in mak-up is after the style of the old Green Prolific, the fruit being of light color, quite soft and of medium size. The plant is all that can be desired and its yield is enormous. To those who have a market near at hand and prefer quantity to quality, this sort will give entire satisfaction.

Waldron (pistillate) is a kind that should not be overlooked. In point of size and productiveness it has but few equals and the plant is of strong growth. Unfortunately it lacks firmness.

Viola I mention because it has recently been put forward as a new sort; in reality it is the Monarch of the West or a reproduction of that grand old variety, so nearly identical that I can discern no difference.

Iowa Beauty, also being sent out as "Childs," is without exception the most beautiful strawberry I have yet grown. In form and color it is perfection itself. It is also of good to large size, high quality and fairly productive. The plant is of good growth and exempt from disease; but how well it will succeed generally yet remains to be determined.

Parker Earle. Of all the varieties that have appeared in a long time, there is no other that can be compared with this as a promising variety for general culture. The plant is phenominal in vigorous growth. It is an everybody's sort—succeeding upon all soils and yielding enormously of beautiful, large and excellent fruit. No variety can be perfect for all purposes. If it were firmer it would not be so excellent for the table, but it would endure shipment better. In firmness it may be classed with the Sharpless.

All the preceding varieties, with the exception of the three first named, ripen in midseason; that is to say are not especially early nor especially late.

Gandy or Gandy's Prize, is a valuable very late sort, being the latest to ripen of any variety I know. The fruit is large, firm and excellent, the plant of strong growth. In common with all varieties producing very large berries it requires high culture. It is not very productive under ordinary culture and I have received reports that the foliage in some localities is seriously affected with rust. With me, however, it has not yet manifested this weakness.

A collection of strawberries produced by H. H. Alley, of Essex County, New Jersey, have among them several varieties that are exceedingly promising; uniting the desirable properties of large size, beauty, productiveness, high quality and strong, vigorous growth of plant. I have seen them in fruit upon Mr. Alley's grounds several times and have also fruited a number of them myself; and I am convinced that several of them are going to prove of great value for general culture. As they are yet under numbers only, I will not attempt to give notes upon them individually.

RASPBERRIES.

Although but few red raspberries of pronounced merit have appeared of late, there are enough black ones to fully supply the deficiency. Among those especially worthy of note may be mentioned the Kansas and Lovett. The former is a blackcap after the style of the Gregg—fully equaling it in size and ripening a week earlier. It is also far more prolific with me, has less bloom upon the fruit and is a freer and stronger grower. It is said to be much hardier. It has been thus far entirely hardy with me; but the Gregg is usually hardy also the first years of fruiting.

Palmer is a variety of the Doolittle type. It resembles closely the Souhegan or Tyler, ripening with it, and I have failed to note any property possessed by it wherein it is superior to that very valuable sort. These remarks apply to the Cromwell and Carman with equal force.

Progress or Pioneer is an improvement upon Souhegan, in some respects, but it is not so early by three or four days. The fruit is identical in size, appearance and quality, but the canes are of much stronger growth and yield nearly double the quantity of fruit upon a given space of land. It also possesses the very desirable property of adhering firmly to the peduncle when fully ripe.

Older is a variety worthy of more than passing notice, being one of the very few entirely distinct blackcaps that have appeared in a long time. In fruit, cane and foliage it is so unlike any other variety as to be noticeable at a glance. In size it is large to very large, rivaling, though not equaling, the Gregg, is almost destitute of bloom upon the fruit, hence very black, and although firm, is of superior, rich and high quality. In growth of cane and productiveness it may be compared to the Souhegan. Season, second early, ripening with the Ohio, or with the third picking of the Doolittle class. It seems to possess peculiar endurance, suffering less from drought than others, and always vigorous and free from disease.

Thompson's Early Prolific is an early red variety that has proved superior, all things considered, to any I have ever grown. Were the berries larger and canes of stronger growth it would approach closely the ideal raspberry for market growing. It is among the earlist to ripen (with the Hansell, &c) and is prolific. In size, compares favorably with the Hansell and Brandywine (although smaller than the Marlboro or Cuthbert) and in firmness and brilliant color it nearly or quite equals these two valuable varieties. Its quality is fair to good—better than Brandywine, but inferior to Turner or Cuthbert. In growth of cane it may be compared to the Brandywine; in yield, with Hansell or Turner. It endures the heat of summer well and has not as yet been injured in winter with me, although I have fruited it several years.

Childs' Japanese Wineberry is perhaps worthy of mention. It has been stated that this anomaly is unproductive; but this is an error, judging from its behavior upon my grounds. The cane is of very strong growth and ornamental enough to be worthy a place upon the lawn. The berries, which ripen at the close of the raspberry season, are rather below the average size of red raspberries. They are deep amber in color, turning to the color of sherry, are translucent and sparkle in the sunlight, rendering them very attractive. They are too soft for transportation and although rich are too acid to be enjoyed by any except those who are fond of acid fruit. Properly cooked I have found it exceedingly palatable and from it pretty and superior jelly can be readily made. The large calixes or burrs which enclose each berry until fully ripe, imparts to the hand a viscous substance upon the slightest touch, that is decidedly unpleasant. With me it is entirely hardy.

BLACKBERRIES.

It is to be greatly lamented, yet must, I fear, be recognized as a fact, that the trend of this most important member of the Small Fruit Family leads to retrograde. Of the new varieties there are very few that are the peers of the Kittatinny, Lawton or Wilson in their palmy days.

Early King is a variety that, however, seems to possess much merit as an early sort, especially for the home garden. In size it is about medium, larger than Snyder, Taylor's Prolific, etc., but smaller than the Wilson. It lacks firmness for long shipment, but is of superior quality and is very hardy. Cane of moderate growth and quite, although not especially, prolific, giving us our first blackberries. It ripens with the Lucretia Dewberry and in advance of Early Harvest. It seems strange to me that a variety so desirable in many ways should be so long in becoming popular. I have now had it in bearing at least a half dozen years.

Thompson's Early Mammoth is evidently a seedling of Wilson's Early and very like it in many ways. It is said to be much hardier. With me it has been entirely hardy. Owing to the mildness of the winters the Wilson has also been hardy during the same period.

Minnewaski has with me proved the best substitute for the Kittatinny since we can no longer fruit that old favorite. The canes are of good growth, fairly prolific, healthy and hardy; berries of good to large size, firm, attractive and excellent. It has not proved especially early, ripening with Snyder and Kittatinny, or ten days after the Wilson.

Lovett's Best, as its name implies, is taking all things into consideration, the most promising of the new varieties. I must not omit to speak of Child's Everbearing Tree Blackberry or Topsy. This I think a hybrid of *Rubus cuneifolius* by *Rubus villosus*, retaining the stout upright cane and villainous spines of the former and the large fruit of the latter. On ordinarily fertile soil the canes attain a height of three to four feet, are erect, very strong and rigid. It branches freely and is densely covered with rather small foliage of a thick, leathery texture. I have never known it to be attacked by orange rust or any other disease. It is exceedingly prolific, beginning to ripen late, or the first of August with me, and remaining in fruit from four to six weeks. The berries are of the largest size, rather soft and of good, though not high, quality. It is not very hardy, its position being between Wilson and Lawton in this regard. In localities where the mercury does not fall below zero it possesses much value for the home garden, but I do not think it would prove profitable to the market grower anywhere, owing especially to its lateness in ripening.

CURRANTS.

But little of interest is to be found among new varieties of the currant. Fay's Prolific is a success with me and I hear none but good reports of it from any quarter.

North Star gives promise of being a valuable variety, especially for the market grower. It is with me a fine growing plant, but I have not had it long enough to test it sufficiently to enable me to speak of it in definite terms.

Black Champion is an improvement upon the old Black Naples. Berries are larger and produced in greater abundance. I am told it is of better quality, but to me all the black currants are so repulsive, in both odor and flavor, that I am perfectly willing that the testing of the fruit be performed by somebody else.

The Crandall has, I am pleased to state, some merit for culinary purposes. It is of strong growth, exempt from the attacks of insects and disease and very prolific; but the fruit is too harsh and austere to be acceptable as a dessert fruit. The berries are exceedingly large, almost equaling in size the Delaware Grape and are decidedly attractive. The claim that a good jelly can be made from it is founded on fact, as I can bear witness.

The Industry Gooseberry has not proved the success with me that it has in many other places. In Monroe county, New York, and upon the Hudson river it is giving the greatest satisfaction. I also saw it fruiting in perfection in Atlantic county, New Jersey, the past season. Although the best of the foreign varieties I have yet tasted, it loses its leaves prematurely and fails to ripen its fruit quite as often as it perfects it.

The Dwarf Juneberries have given considerable satisfaction at the East. The chief complaint has been that the plants do not yield heavily enough and that the berries and foliage are attacked by a fungus. The variety known as Success is an improvement upon the type in point of size of fruit, quality and productiveness and has suffered less from the attacks of fungus than the common Dwarf variety. It has suffered also to a slight extent. I find the Juneberry a much better fruit for canning, pies, etc., than as a dessert fruit. In its natural state it lacks flavor, but when cooked is quite acceptable.

Eleagnus Longipes is indeed an interesting fruit. Did it ripen in late autumn instead of July its value would be greatly enhanced. The bush is of low spreading habit, densely clothed with pretty foliage and comes into bearing as quickly as a red currant. Its yield is simply wonderful, the berries being literally crowded upon the underside of the branches. The fruit is borne upon slender stems about an inch and a half long, are of cannibar color with numerous small, light gray dots, and about three-quarters of an inch long by a half inch in diameter. It is tender and juicy with one large long, shapely pointed seed in each berry, but so acid as to render it utterly unfit for use as a dessert fruit, but usesul for tarts—in fact, for all the purposes for which the Cranberry is used.

As these notes have consumed a good deal of your valuable time, I beg you will permit me to omit grapes. Perhaps the members from New York, Ohio and Missouri will favor us with reports upon new and promising grapes

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HORTICULTURE.

The FARM AND VINEYARD is regarded as the official organ of the Chautauqua Horticultural Society.

GRAPES, PEACHES AND PLUMS.

J. Buckeye Tells About the Ways and Means North Easters Have of Raising Them.

By J. BUCKEYE.

For the FARM AND VINEYARD.

NORTH EAST, Sept. 30.—"Wal, grapes got a black eye." "Bottom's all fell out." "Some new disease or bug and they're all rattlin' off onto the ground."

I have been away about a week and the above quotations are some of the greetings I received on my return home. It made me feel like the last hollyhock of the season, the last leaf withering and falling. This was yesterday. I went up to the Lake Shore grape branch and there were fourteen fruit cars and men and teams loading them with grapes. Genial George Blaine was there in charge of Phillips, Blaine & Stetson shipping firm. I said to him, "How's grapes?"

"O. K.; just sold a car of Concords at seventeen cents."

"What about this new disease and rattling business?"

"Overproduction," said one.

"You're right," said another.

"Too much wood," said a third.

"That's what's the matter. You can't expect vines and soil to stand everything."

Then Will Selkregg told about his father putting barnyard manure on his vines last fall. He commenced on one side of the vineyard and kept on until he got it about half covered; and then his man thought he could turn into the rows a little better on the other side of the field, so he commenced there, and there wasn't quite enough manure to reach, leaving five rows in the centre without any; and in those five rows the grapes are rattling off like touch-me-not seeds, while the rest of the vineyard is all right and the grapes stick like sin.

Pierce Bros. have some ten acres that are "rattling," and George told me last evening that anybody can see with the naked eye just how far they manured their grapes, and where they did they are all right. The same thing can be said of Father Rogers' vineyard, also about Mr. Higgins,' who used wood ashes.

But Mr. Scouller fertilized all of one vineyard and yet all of it is "rattling" some. This is a sticker, but I'll give it as a guess that too much work has been put on the vines. A grapevine is doubtless something like a man; overwork gets him rattled easy.

The Lake Erie Grape Growers' Association sold a car on track here yesterday at seventeen cents. It goes to Dayton, Ohio. I heard that some lots were bought at fifteen cents. They are retailing in our home groceries for twenty.

Three years ago the average sale of the Chautauqua Shipping Association was sixteen cents; and about the same price here. Two years ago our grapes averaged about twenty-two cents; and last year close to twenty-one. But there was scarcely any other fruit in the country then. But this year any old scrub of a fruit tree of any kind whatever is laughing fat with good qualities of fruit. Good trees in proportion. Why, I was down on Charley Mottier's farm and I saw hundreds of twigs as long as my arm with plums stuck on them as thick as you ever saw grapes stuck on a stem. And the peach trees were loaded to the water's edge just the same, and every tree had half a dozen props and they were breaking down all over the orchard. And Doc Heard and I drove down to "Bid" Farr's, who has a little orchard that a thousand feet of wire netting reaches round, and out of that patch he has picked one hundred and seventy bushels of plums and prunes and seventy-five bushels of peaches By the way, Mr. Farr has a little farm of twenty-six acres, twelve acres pasture and fourteen to fruit and garden truck, and he tells me his cash sales will be over eighteen hundred dollars this season. He uses his plum and peach orchard for a hen-park, and a place for his pigs that pick up the fruit that falls to the ground.

But Farr and Mottier are not the only ones who have peaches and plums—everybody's got 'em this year. Even Mayor Scouller, whose peach trees have blossomed beautifully for eight or ten years, have produced peaches for the first time this year. Now probably another decade of blossoms, but the grapes grow on forever. At least they have here for more than thirty years without a single skip.

I am writing in the morning and haven't been out yet to learn anything about prices to-day, but I would have you know that we are a contented people, except some of the grape men. If they can't get over a hundred dollars of clear gold off of a single acre they kick and talk about the bottom falling out. What if it does fall out this year, there are thousands of towns in this broad land where no grapes have been sent yet. In my opinion good, ripe, packed grapes will sell at a profit this year and the years to come.

LOOK AT THIS! The FARM AND VINEYARD and the *Buffalo Express*, both a whole year for $1.00.

Pecan Culture in the South.

The Southern Horticulturist and Farmer, an elegantly printed and illustrated 16-page paper, devoted to horticulture, floriculture, poultry, bees and the home circle, will issue a special 5,000-copy edition on October 1st, 1891, devoted especially to Pecan culture in the south, by writers of authority on the subject. Send twenty-five cents for three month's subscription including this number, or $1.00 for a year. Address, WM. D. COX, Bus. Mgr, Southern Horticulturist and Farmer, Bryan, Texas.

You will do yourself and us a great favor, my friends, if, when writing to advertisers, you say you saw their advertisement in FARM AND VINEYARD. They always use FARM AND VINEYARD customers well.

Mr. James Dean On the World's Fair.

During a long and very interesting interview with Mr. James Dean, at his establishment at Bay Ridge, N. Y., on Tuesday, 22d inst., that gentleman very kindly communicated to us his views of the situation at the horticultural department of the World's Fair at Chicago, from whence he had recently returned.

Mr. Dean's position as president of the Society of American Florists, and his well known eminence in the profession, render his opinion on matters relating to floriculture in all its ramifications, peculiarly valuable, and as such we present them to our readers.

On Friday, Sept. 11th, on the special invitation of Mr. John Thorpe, Chief of Floriculture, Mr. Dean reached Chicago, together with Messrs. W. R. Smith, of Washington; John Chambers, Superintendent of Parks, Toronto, Canada; Robert Craig, of Philadelphia, one of the largest florists of that city; W. A. Manda, of Short Hills, N. J., of the firm of Pitcher & Manda; W. Hamilton, Superintendent of Public Parks, of Allegheny, Pa.; E. G. Hill, of Richmond, Ind., who, with Edgar Sanders, were solicited as an advisory committee, to confer with the two chiefs of horticulture on floral matters of the World's Fair. On Friday the body, with other prominent gentlemen of this city, visited the World's Fair grounds with Chiefs Samuels and Thorpe.

On Saturday a meeting was had of the above gentlemen in World's Fair headquarters. Mr. Dean was elected president and E. G. Hill, secretary.

Chief Thorpe gave a full account of the progress made, the requirements of his department, which he said were likely to be greatly increased by the wooded island, fifteen acres in extent, situated in the centre of the lagoon and of which it was the original intention to make wild wood, being placed at his disposal to decorate, and the decorations around the ladies' building and many of the state buildings he had been requested to attend to. He gave in detail the promises he had received of 3,000,000 Dutch bulbs and 100,000 roses, 500,000 pansies, masses of rhododendrons, hardy perennials, annuals and other flowers that room would have to be made for.

The following important resolution as to progress made, and the satisfaction of the gentlemen, will show to the world that the floral matters are in good hands and will receive careful attention:

Resolved, That the members of this committee, in their extended view of the grounds yesterday, are fully impressed with the fact that the preparations in the different departments are on an adequate colossal scale and they will go back to their homes and the different organizations they represent with the feeling that horticulture and floriculture will doubtless be represented on a scale never before attempted in the history of the world, and in entire harmony with the magnitude and completeness of the other departments.

Mr. Dean is of opinion that the proposal to remove the horticultural building one hundred and eighty feet back further from the lagoon, so as to give a brilliant piece of garden decoration between the building and the lagoon, will be carried out and will prove a great advantage.

The department asks for $750,000 for plants and care of same, and of this sum $25,000 will be alloted to construct a temporary greenhouse, outside the limits of Jackson Park, for the reception and establishing of plants coming from abroad and from points in this country.

It must not be forgotten that where other departments have to attend only to the construction of their buildings leaving it to the exhibitors to fill them, the Horticultural Department has to erect its buildings, fill and replenish them, and exercise the most watchful care over their contents, as long as the Fair lasts and a long time previous as well.

The co-operation of Europe is assured; Great Britain chose the site for her government building at the World's Fair on Monday last, September 21st. Germany's choice will be announced during the week.

The immense importance of the florist's trade in England and Germany is a guarantee that their horticultural exhibit will be worthy of the occasion and of their reputation as the abode of trained florists.

Piles are now being driven for the erection of the Horticultural Building, and the laying out of the grounds surrounding it is already so far advanced as to give an idea of what the effect will be when completed. A splendid drive along the borders of the lake is being made from the material excavated from the lagoon. The view to be obtained over Lake Michigan from in front of the Horticultural Building is magnificent.

Mr. Dean spoke most highly of the ability and energy displayed by Chief Thorpe, who is to be found at his office in the grounds every day from 8 a. m. All unite in thinking that John Thorpe is the best man that could possibly have been appointed to the very onerous and honorable position he fills, and florists have good reason to congratulate themselves therefore. Mr. Dean affirms that Chief Thorpe enjoys the entire confidence of every florist in the country, and that perfect cordiality reigns throughout the whole trade, who are proud of the chief representative of their skill and interests at Chicago and before the world.—*Florists' Exchange.*

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Grape Vines Free.

No paper ever made such a liberal offer. Four strong grape vines—four of the best varieties in existence—and a year's subscription to this paper for only 50 cents. The Concord is still the best flavored and the most profitable black grape grown. All grape growers who grow grapes for profit grow the Concord. The Niagara is the best white grape, and only a few years ago the vines of this variety sold for a fabulous price. The Brighton is the best flavored grape, later than the Concord and Niagara. Wyoming Red is acknowledged to be the best red grape of recent introduction; a comparatively new variety, but sufficiently tested to give it a place here as one of the best four grapes. Now is the time to stock your garden. For every four subscribers you send us at 25 cents each, you get four vines sent, postage paid. These vines are one-year-old No. 1 vines, grown by Geo. A. Josselyn, the well known and reliable nurseryman, of Fredonia, N. Y., and will be packed and sent direct from Mr. Josselyn's establishment at Fredonia.

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Which Is the Chick's Mother?

Here he is again—the man who wants to know "Which is the mother of a chick—the hen that lays the egg, or the hen which hatched it?" Why the hen—the hen—the hen that—well, when an egg is hatched in an incubator, which is the mother of the chick—the incubator or the hen that laid the egg? And when a hen hatches a lot of duck eggs, which is the mother of the ducklings—the duck that laid the egg or the hen that hatched them? Again, once upon a time when a flighty pullet abandoned a lot of eggs within three days of hatching time, I, with the assistance of heat from the hot water tank on the back of the stove, finished the job. Now who was the mother of those chicks—the hen that laid the eggs, or the pullet that wouldn't stick to business three weeks, or the kitchen stove, or "yours truly," or the other hen who adopted them into her numerous family? At another time one of our old turkey gobblers went to sitting. After a while he gave up the job; but suppose he had gone on and completed the contract, and brought out a dozen or so light Brahma chicks, which would have been the mother of said chicks—the old gobbler or the hen that laid the eggs? Next time give me a harder one, but don't throw it when the mercury is among the nineties, the cat sick, and the house full of company. One woman can't stand everything all at once.—*The Orange Judd Farmer.*

Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 50 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

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We will send two of the splendid, rare bulbs, postage paid, and FARM AND VINEYARD a year for only 50 cents; or we will send one bulb free to any person who sends two subscriptions at 25 cents each.

We will send one dozen Tulip Bulbs and this paper a year for 50 cents, or will give as a premium for three subscribers at 25 cents each.

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Apple Growing.

BY N. J. SHEPPARD, Miller Co., Mo.

For the FARM AND VINEYARD.

Good apples pay a good profit, but those of a poor quality often fail to pay expenses.

To grow good apples a reasonably good soil is necessary, and it should be prepared and kept in a good tilth until the trees have become well established. If two-year-old trees are selected, the cultivation should be kept up at least two years after setting out, and in some cases where it is necessary to build up the soil, three or four years will be still better.

The kind of soil, as well as the purpose for which the fruit is grown, should be considered. Some varieties will thrive best in a sandy soil, while others need a limestone soil to make the best growth. Some varieties are best for home use, while others are better for market. It is best to get standard varieties adopted to the soil and climate. Have the places dug sufficiently large to readily admit all of the roots without bending or crowding. Cut off all of the injured or bruised roots, and then cut back the top in proportion to the roots. Fill in the soil carefully, having it well fined so that it can be worked well in around the roots. After the roots are covered, in a majority of cases, it will be best to tramp the soil down well. If set in the fall it pays to wrap the stem of the tree at least two feet up with old rags to protect from rabbits and mice.

Give the cultivation in the early part of the season, and the first year at least, mulch the latter part. In the fall it will be a good plan to draw a little mound of earth up around the stem of the tree, and thus keep them well protected from injury in thawing and freezing during the winter. This should be leveled down in the spring.

Sufficient pruning should be done each year to secure a good shape and a watch for the trees be kept up during the summer. By going over the trees once a week during the summer, the eggs can be seen on the inside and can be cut off without injury to the tree. If care is taken in doing this work it will be the safest remedy that can be used.

In nearly all cases wood ashes can be applied and worked into the soil with benefit. It is always an item to secure a vigorous thrifty growth in order to secure the best results.

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Show this paper to your neighbor and tell him it costs 25 cents a year. If he don't want to subscribe for a whole year he can have it on trial at the following rates: three months, 10 cents; or, six months, 15 cents. Subscribe now, while the offer is open.

In order to properly fumigate the poultry house put into burning sulphur a pound of old tobacco leaves or a piece of common resin twice as big as an egg and close the house perfectly tight. Insects cannot live in this kind of atmosphere.

A FINE EVERGREEN.

A Beautiful Fir Worthy of the Attention of Landscape Gardeners.

On the grounds of The Rural New Yorker a specimen of Nordmann's fir has stood uninjured by heat or frost for some fourteen years.

NORDMANN'S FIR.

The journal mentioned says: "We know, however, of a tree of about the same age and size being killed, root and branch, less than two miles from The Rural grounds, during a severe winter. An unusually dry fall preceding may have caused its death rather than the severe winter, as other conifers regarded as perfectly hardy were also killed. This beautiful fir is said to be hardy in Rochester, and may stand still colder climates.

"Abies (Picea) Nordmanniana was first discovered by Professor Nordmann growing upon the Adshar mountains at an elevation of some 5,000 feet. Some of the trees were 100 feet in height. It is found also on the Crimean mountains. The leaves are a full inch in length, of a dark, very glossy green on the upper surface, and of a glaucous color underneath, making a pleasing contrast not unlike that seen in Alcock's spruce. It is certainly a fine evergreen and worthy of a place in every collection." The cut here reproduced is from a photograph of the specimen alluded to.

Experiments with Asparagus.

It has been ascertained by recent experiments with male and female asparagus plants that the male plants gave an average of 50 per cent. more yield than the female, and the shoots were also larger and the crop earlier. It was found that the differences in yield were greater in the early part of the season than in the latter part. Male plants can be secured for a certainty by the division of old plants, or better, by the selection from two year seedlings of such as do not bear seed. It has been contended for a long time by growers that there was a difference in profit between the two, and these experiments which have proven it to be a fact are timely.

The percentage of the wheat crop of 1890 remaining in the hands of growers is, according to the department report, less by 15 per cent. than the average of the previous ten years and less by 33 per cent. than the reserve following the big crop of 1884.

BREEDERS' CARDS.

Under this heading cards will be inserted at the following very low rates: 30 cents per line for six months; 50 cents per line for a whole year. Single insertions 8 cents per line.

Express Pre-Paid
— ON EGGS FROM —
Thoroughbred Light Brahmas, White and Barred Plymouth Rocks, Wyandottes, and White and Black Minorcas, at $2.00 per 13; $3.00 per 26. Send for Circular. JOE CRAVES, Agent American Express, BLACK RIVER, N. Y.
Mention FARM AND VINEYARD.

River Herd
M. D. YODER, Middlebury, Indiana.
Breeder and shipper of Large English Berkshire Swine. My herd is headed by Jumbo, 19353. He would weigh, when fattened, 800 pounds. Satisfaction guaranteed. Write for what you want.
Mention FARM AND VINEYARD.

FOR SALE. SOUTH GEORGIA FARM. Good for Truck, Fruit and Vineyard. Eighty acres; one and one-half miles from Blackshear Railroad Depot. Address, W. R. ANDREWS, Macon, Ga.
Mention FARM AND VINEYARD.

NORFOLK, VA.—NEAR THE SEA.
Those who wish to secure a home in the best portion of the
"SUNNY SOUTH"
Can find out all about it by sending stamp to the address below and studying the papers that will be sent them. A. JEFFERS, Norfolk, Va.
Mention FARM AND VINEYARD.

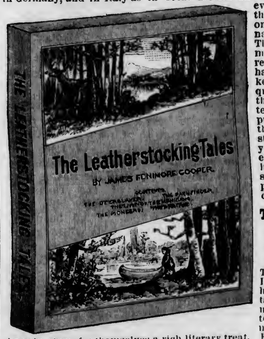
BY MAIL 15c. POSTPAID.
THREE FANCY INITIAL LETTERS for marking linen, etc., each one different, large bottle of marking ink—will not wash out—stamping fluid and designs for fancy embroidery all packed in a box, with full directions for use, with list of our new and original novelties and stamping patterns, FOR 15c. POSTPAID to any address. Write at once stating initials required. Orders filled promptly. Address,
EUREKA MANUFACTURING CO., Chicago, Ill.
Mention FARM AND VINEYARD.

SPRAYING + OUTFITS. PERFECTION.
WE MANUFACTURE
THE LARGEST VARIETY OF SPRAYING PUMPS

Of any company in the world. Our EMPIRE and PERFECTION Pumps stir the liquid automatically and will spray *100 Trees per hour.* We also make the GARFIELD KNAPSACK SPRAYER, LITTLE GEM SPRAYER, and the VERMOREL NOZZLE; also a Power Sprayer at a low cost. We sell London Purple, Paris Green and Sulphate of Copper at wholesale prices. Send for Catalogue; and write your name and address plainly, giving county. Address, **Field Force Pump Co.,** LOCKPORT, N. Y.

A GREAT LITERARY BARGAIN!
Cooper's Famous Romances of the American Forest!
An Entirely New Edition of
THE LEATHERSTOCKING TALES,
By JAMES FENIMORE COOPER.

The first and greatest of American novelists was James Fenimore Cooper. "His popularity," says a writer in the *Century Magazine*, "was cosmopolitan. He was almost as widely read in France, in Germany, and in Italy as in Great Britain and the United States. Only one American book has ever since attained the international success of these of Cooper's—'Uncle Tom's Cabin,' and only one American author, Poe, has since gained a name at all commensurate with Cooper's abroad." The great author is dead, but his charming romances still live to delight new generations of readers. "The wind of the lakes and the prairies has not lost its balsam and the salt of the sea keeps its savor," says the same writer above quoted. Beautiful indeed are Cooper's stories of the red man and the pioneer, full of incident, intensely interesting, abounding in adventure, yet pure, elevating, manly, and entirely devoid of all the objectionable features of the modern Indian story. No reading could be more wholesome for young or old than Cooper's famous novels. An entirely new edition of the Leatherstocking Tales has just been published, in one large and handsome volume of over three hundred large quarto pages, containing all of these famous romances, *complete, unchanged and unabridged*, viz.:



THE DEERSLAYER, THE PATHFINDER,
THE LAST OF THE MOHICANS,
THE PIONEERS, THE PRAIRIE.

This handsome edition of the Leatherstocking Tales is printed upon good paper from *large type*. It is a delightful book, and one which should have a place in every American home. It contains five of the most charming romances that the mind of man has ever conceived. A whole winter's reading is comprised in this mammoth volume. All who have not read Cooper's stories have in store for themselves a rich literary treat. Every member of the family circle will be delighted with them. We have made an arrangement with the publisher of this excellent edition of the Leatherstocking Tales whereby we are enabled to offer this large and beautiful book almost as a *free gift* to our subscribers. Such an offer as we make would not have been possible a few years ago, but the lightning printing press, low price of paper and great competition in the book trade have done wonders for the reading public, and this is the most marvelous of all.

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Address all letters

FARM AND VINEYARD, Erie, Pa

FRUIT AND FLOWERS.

PACKING FRUIT.

A Michigan Fruit Grower Points Out Some Common Mistakes in Doing This.

In a paper read before the West Michigan Fruit Growers' association attention was called to the mistake made in packing apples in the flour size of barrel. The essayist had made it a point to learn, as nearly as possible, the difference in price between a full standard barrel and the "snide" in Chicago last season. He says: "I found the range of prices for the season to be $1.25 to $3.50 per barrel, and by inquiring at different times and of a number of dealers I found that the amount of difference in fruit amounted to a little less than half a bushel, and the difference in the selling price was from 50 to 75 cents per barrel, or an average of 60 cents per barrel after paying a slightly increased cost on the barrel. Or, in short, the grower received $1.20 per bushel for all the extra apples required to pack full standard barrels. And, further, it is the large barrel that sells promptly, while the small barrel often suffers loss, in the case of a glut, by rotting down. This makes the difference still larger. The shippers in the city are the largest and best buyers, and they always want a large barrel with ten hoops, and are willing to pay for it.

"The same rule applies to the whole line of small fruits. As the case in common use is supposed to hold 16 quarts, but in reality holds only 14 to 14½ quarts, we frequently hear men state that they do not represent them as quarts but only as sixteen boxes. Such statements are unworthy and suspicious. The package manufacturers are largely to blame, as they are constantly making changes in the form of packages, and one idea seems to run through all the work, and that is to make them a little scant measure. The majority of our farmers seem to think that a barrel is a barrel, even if it is not more than two-thirds grown, and the same idea prevails in regard to a quart box. It pays to be honest in fruit growing and packing, for the slightest trickery is detected instantly by the shrewd buyer, and he promptly knocks off enough from the price to protect himself; the grower has to stand it."

Undergrowth Beneath Beeches.

The birch and similar trees will allow things to grow under their shade; when the beech has the mastery it has the tendency to exterminate all beneath it. This may partly arise from its dense foliage and partly from its depriving the soil of its necessary constituents. The beech is not, however, the only tree which does this to a greater or less degree. The struggle between the beech and the oak is generally long and stubborn, and in the majority of cases the latter disappears.

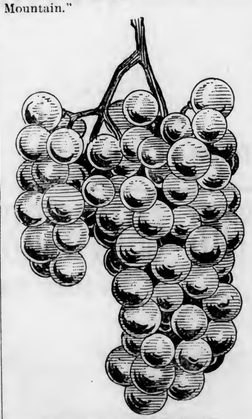
Winter Protection.

Winter protection is necessary in many sections, but the plants do not require smothering. Hardy shrubs can stand the cold if planted in proper locations, and half hardy ones require only little protection. Many of the half hardy ones require protection more from wind than cold, and all that is required is to tie a few branches of spruce or other evergreen boughs loosely around them. Perennial plants will sometimes be thrown out by the frost if not protected, and the object of the covering is not to keep the plants from freezing, but to keep the heavy frosts out of the ground bed.

Another object of winter protection is to keep the sun off. The alternate freezing and thawing is very injurious to the vitality of the plants, and it must be avoided. Some plants can be bent over in trenches and pegged down, which will protect them from the cold and sun. The Everblooming roses must be treated in this way or be taken up in the fall. The covering of the soil around the roots of the plants should be done before cold weather is here, but the other kind of protection may be postponed until late in the season.

One of the Newer Grapes.

It has been claimed by some that the Green mountain grape offered as a new variety is identical with the Winchell, an old sort offered many years ago. On this point Professor W. F. Massey, of the North Carolina station, is credited with the following statement: "A grape called Winchell was sent to us this year with the statement that it is the same grape that has been sent out as Green Mountain. We planted it alongside of the Green Mountain received last year. So far it differs widely in the appearance of its foliage from the Green Mountain."



THE GREEN MOUNTAIN GRAPE.

The Green Mountain is said to have been propagated from a chance seedling found in a garden on the Green mountains in Vermont at an altitude of 1,400 feet. The fruit clusters are of medium size, often shouldered with berries a little larger than those of the Delaware, greenish white, when fully ripe, skin thin and quality fine. It has been well spoken of as a good early white grape, bearing early in September and withstanding rot and mildew very favorably. It is claimed for the Green Mountain that the vine grows as strong as the Concord, and will flourish in any soil where the Concord grows, and is therefore specially adapted for growth in northern localities where valuable varieties often fail or never ripen.

Ivy Growing on Trees.

Ivy twining about trees is very ornamental, but, says an English authority, there can be no doubt that it retards the tree's growth and healthy development, and in time causes its death. The ivy roots itself into the bark of the trees of hard wood as well as pines, and when fully established the trees gradually exhibit a stunted appearance compared with that of the same species where no ivy has been allowed to grow. In cutting up the wood of these ivy covered trees, the timber, as a general rule, is shorter in the grain and not so elastic. When it is thought desirable to rid the trees of ivy it should be cut at the base of the stem and allowed to decay and fall from the tree gradually of its own accord, for if torn off at once some of the trees are apt to die by sudden exposure, while others are almost certain to become bark bound, thus lessening their value to a large extent.

Smilax.

Smilax is a tuberous rooted plant and is dormant during the summer. The tubers may be divided, if necessary, and newly potted as soon as the new growth appears. The plants may also be easily grown from seed or cuttings, or they may be bought of the florist. The soil should be light and rich. It is suggested in Orchard and Garden that the plants look better trained on green strings, which should be supplied when the plants are only a few inches high, and not left, as is too frequently done, till they are two or three feet high. The string being small and green, it is cut off with the shoot, and there is no bother with untwining.

Unfruitfulness of Trees.

There are many reasons for the lack of fruitfulness in plants. A tree may fail to produce flowers, and therefore no fruit can subsequently follow. The plant may be laden with bloom and still no fruit result. In such a case it is possible that one of several circumstances may bring about the result. The pollen if defective will not fertilize the seed vessels. This is well illustrated in some varieties of strawberries that are called pistillate, because the stamens are abortive. There may be a lack of insects for the transfer of pollen from one flower to another, and the pistils fail to enlarge and develop seeds.

When heavy rains come at the time the flowers are in full bloom there are many reasons why the fruit fails. The insects are not so active, but most of the pollen grows before it reaches the proper place, just as the wheat may germinate in the sheaf or while standing in the field during the wet weather. If the pollen grows, that is, sends out its tube while in the stamen, it must fail to serve its purpose.—American Agriculturist.

A Cheap Flower Pit.

I kept my tender roses last winter by having a frame made of planks, writes a correspondent in Popular Gardening. This frame was set on the ground and the earth inside taken out to a depth of 1 to 1½ feet, and this earth banked up the frame. Then I filled in, first, horse manure, then muck and sand, and planted my roses, covering them with glass and in cold weather with a piece of carpet. The last of the winter I put more manure on the outside, and my roses kept green all winter and in the early spring sent out fine strong shoots, which have borne some of the finest roses I ever saw. I shall try other plants the same way this winter. This would hardly be called a pit, but has been a very inexpensive yet successful way to keep roses at least.

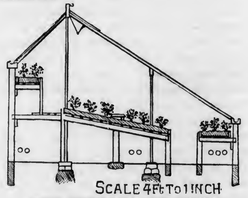
Tender Roots Set Deep.

It is certainly true that, when well protected, very tender roots will endure our hardest winters. When we obtained cions of Russian pears, plums and cherries, we had nothing to graft them on but our native seedlings. We have done so, and, planting them out in nursery and orchard, we have never lost a tree of any variety from winter killing of the roots. But we have always taken pains to set them down well below the point of union.—Vermont Watchman.

A MODEL ROSE HOUSE.

A Plan Originated by a New Jersey Florist and Adopted by Many Growers.

By far the largest part of the best growers have adopted the style of house as shown in the cross section of the illustration, which is generally called the May style, from John May, of Summit, N. J., who laid before the Society of American Florists what he had found to be the most useful and convenient size and style of house, all things taken into consideration. Such a house can be arranged as to staging to suit the use it is to be put to; but as shown, it is the May style of arrangement for roses, which are planted in the shallow bench style with yearly renewals of plants in most instances.



CROSS SECTION OF ROSE HOUSE.

The length of the house may be made to suit circumstances, but to be economical it should not be less than 100 feet in length—probably 150 feet would be the most convenient—so that in ranges requiring greater length the sheds and heating apparatus would be better in the middle with houses opening out from each side. It is commonly spoken of as a 20-foot house in width, being 18 feet 6 inches in the clear with a front bench 2 feet 9 inches; middle, 8 feet 6 inches and back 1 foot 10 inches. This gives a walk of 2 feet 3 inches in the front, one of 1 foot 10 inches at the back, with a 11-inch board as a walk through the wide center bed for cutting buds and other necessary work. The rafters are 16 feet in front and 6 at the back. For columns under the center and to support the long sash, use iron made of gas pipe in preference to wood. We are indebted to Prairie Farmer for the foregoing cut.

Tender Roses.

All attempts to winter tender roses out of doors by giving protection as the books instruct have proved failures more or less complete on The Rural New Yorker experiment grounds. Last winter was comparatively mild. A bed of some 150 teas and hybrid teas was covered with leaves and evergreen twigs. The following were injured less than the others: Marie Guillot, yellow; Etoile de Lyon, yellow; Isabella Sprunt, yellow; Marie Van Houtte, yellowish; America, yellow; Homer, a narrow, long bud tinted with light pink; Canary, yellow; Caroline Custer, yellow. And the loveliest of these is Isabella. Souvenir de Wootton, a hybrid tea, is of a fine red color, of delicious fragrance, blooming freely.

Flower and Fruit Notes.

Flowers in porous pots require more water than those in hard burned pots.

Reports show that grapes under a board or even under muslin cover are almost exempt from rot.

Amaryllis Johnsonii provides a handsome garden plant that can be easily wintered in a cool cellar.

The Elberta, a peach of Georgia origin, has gained considerable popularity in that state as an early shipper.

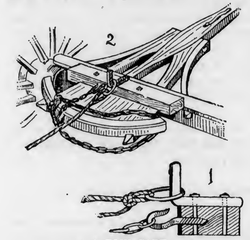
The new hybrid tea rose, Pink Rover, is of semiclimbing habit and bears flowers of a pale pink color.

FARM & GARDEN.

USEFUL APPLIANCES.

New Use for a Tow Cart—A Harness Attachment for Horses That Rear.

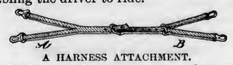
Long Island farmers find what they are pleased to call "tow carts" of great use. In the cut here reproduced from Rural



A TOW CART.

New Yorker (Fig. 2) is shown one of these carts which, as a matter of fact, is nothing but the front axle and wheels of a wagon so arranged that they can be hitched to any vehicle when extra power is required.

A new use has recently been discovered for the tow cart. Fig. 1 in the first cut shows a pair of hooks to be attached to a tow cart—the front wheels of a farm wagon, the pole of which has been made rigid. The draft rope from a horse hayfork, worked with a carrier, is attached to the upper hook, and can be released at the proper moment without stopping the team. A good man on the load will have another forkful ready by the time the team gets back. From the second hook a chain can be conveniently used in hauling empty wagons off the barn floor and in bringing in the loaded wagons from the barnyard. It is also told that a catch may be used, which releases the draft rope by pressing a lever, thus enabling the driver to ride.



A HARNESS ATTACHMENT.

In the second cut is shown a harness attachment for holding down a horse that is inclined to rear and prance. This is the device of an Indiana genius, and was originally described in the journal already quoted. It is made complete with four snaps, one ring and one buckle, as shown in the cut. To put on the contrivance snap the ends marked B to the rings in the breeching straps, bring the ends A inside the girth, pass up through loop in the breast strap and snap to the rings in the bits.

Absconding Bees.

Bees often desert their hives in early spring. Sometimes this is caused by dissatisfaction with the hive, sometimes from want of food, and often, doubtless, because they are weak and dissatisfied. As a rule, good strong colonies, with ample stores of food, seldom give trouble in this way.

As to the prevention, Root in his "A B C of Bee Culture" says: "If you would not lose your bees by natural swarming, clip the wings of all queens as soon as they begin laying; then look after them often and know what is going on in the apiary every day during the swarming season. If you would not have runaway swarms in the spring, and while queens are being fertilized, confine your experiments to pecks of bees instead of pints."

Professor Cook, in his "Beekeeper's Guide," says: "Sometimes swarms break cluster and take wing for their prospective home before the beekeeper has hived them. Throwing dirt among them will sometimes cause them to light again. Throwing water among them in form of a fine spray will always do this. For such purpose some hand pump is desirable. Another important use for a fountain pump in the apiary is this: If a swarm, when clustered, be sprinkled occasionally, it will remain clustered indefinitely. While most customs have a reasonable basis, the common one of horns and bells and beating of pans to stop a swarm is a notable exception. It does not the least good."

Experiments in Potato Culture.

Mr. Carman tells in his "New Potato Culture" that his experience has led him to answer all inquiries as to the size of seed pieces, "Use large sized pieces containing two or three strong eyes." The advice to use whole seed he considers very bad indeed. Mr. Carman's experiments make it appear that to produce the potato crop potash is required in larger proportion than either nitrogen or phosphoric acid, and that more is required for this crop than for either wheat or corn, notwithstanding that the latter is such a gross feeder.

Good Counsel for Amateur Beekeepers.

A correspondent in the American Bee Journal gives this advice to beginners:

Keep things in order in the apiary. Have your tools, empty hives, sections, crates, etc., in their respective places, ready for use in case of need.

Never disturb bees while excited, neither before nor during a thunder storm, hot windy days, honey dearth nor while robber bees are bent on pillage.

To avoid bee stings, proceed quietly and with care while working among your bees, do your work with dispatch, and have your hive closed before the bees become aware that you have been near.

Never work among bees without a smoker, but use it judiciously and on proper occasions to keep them under subjection and prevent their anger, but in case of accidentally upsetting a hive the spraying of the bees with cold water will have the effect of quieting them.

When working among them for any length of time do not think it too much trouble to protect your head and face with a beeveil. Watch carefully each hive in your apiary, notice the doings of each colony of bees, and have a full understanding of their wants and needs, and you will seldom have to mourn over heavy losses and bad luck.

Secretion of Wax by Bees.

In producing extracted honey with old combs, do not the bees secrete more wax than they can use with profit? In other words, is not some of the wax wasted? was a query propounded and answered recently in the American Bee Journal.

Professor Cook replied: "I do not think so. I believe this waste of wax imaginary. Bees secrete wax when they need it." A. B. Mason said: "My bees do not secrete wax unless they need it. The idea that bees have to make wax, whether they want to or not, is a humbug, I believe." The editor said, "As bees only produce wax when needed, the chance for waste is infinitesimally small."

Another series of experiments in tea culture is to be made by the department of agriculture, this time at Los Angeles, Cal., and the United States minister to China has been asked to provide the seed.

THE DEXTER CATTLE.

Peculiarities of a Breed but Little Known by the Public.

The Dexters, like the Kerrys, are natives of the far southwest of Ireland, where their picturesqueness and exceptionally good dairy qualities secure for

A TYPICAL DEXTER COW.

them well deserved appreciation. The exact origin of the Dexter strain is somewhat uncertain, but the best accepted theory is that they have been bred in-and-in from one or two particular specimens of the Kerry without admixture of foreign blood. Mr. Martin J. Sutton was one of the earliest English fanciers of these beautiful little animals, the first to take a prize at shows in England.

The Dexter differs from the Kerry in being short in the legs and somewhat coarser in the bone. Their heads are shorter and wider; the horns not uniformly like the Kerry, but often a little drooping; level wide backs, deep chests and thighs—in fact, in horn and shape, like a miniature Shorthorn. They are equally hardy and as good milkers as the Kerry, but while not so adapted for mountain climbing are much more suitable for meat producing, and are likely to become a favorite dairy cow. The Dexter color is either black or red, with more or less white on the udder and under the belly.

The Best Beans.

Bean growers are not agreed as to the best variety. Certain kinds are undoubtedly better for certain soils and methods of culture than others, and which kind would be the best for any particular field cannot be told without a full knowledge of the circumstances. A comparatively new sort, the Burlingame Medium, is very early, hardy and prolific, having been known to yield at the rate of forty-two bushels to the acre. The Scofield or early marrow pea is the most popular sort in western New York, and is rapidly becoming so in the bean growing districts of Michigan and the west. These are the earliest sorts to ripen and do not require as much room as the others, twenty-four to twenty-eight inches being the common distance. Medium and white marrows are stronger, growing a little later, and require more room.

The white kidney has the largest vine and is the latest to mature. The prolific tree bean, which has been extensively advertised as so uncommonly prolific, is very late, and I have never known of a profitable crop of that variety. Of the colored field beans, the China red eyes and the yellow eyes are early, very hardy and easily grown. The turtlesoup is larger vined and late, and both it and the still larger and late red kidney sometimes give enormous yields, but are very unreliable. All the colored beans at times command a very high price and other years are quite unsalable, so that with these varieties we are apt to lose one great advantage of the bean crop—that is, a ready sale. Considering all things, the early marrow pea is probably the safest variety for an experimental crop, says a Michigan farmer.

Successful Corn Growing.

At the Illinois experiment station, where corn culture has been for several years a subject of observation, planting at about one inch in depth has been followed by larger crops, on the average, than deeper planting. Corn planted at the rate of one kernel every twelve inches, in rows 3 feet 8 inches apart, gave a larger average yield of grain than when planted either thicker or thinner. Better results were obtained from planting in hills than in drills, apparently because in hill culture the corn could be kept cleaner. No appreciable benefit has been derived from frequent cultivation nor from cultivation after the ordinary time. For three years the yield has been increased to the extent of one-fourth by shallow cultivation. No practical benefit was received from the use of commercial fertilizers. The increased yields from the use of stable manure probably repaid the cost of the application and left some profit.

Non-Sitting Breeds.

A well known authority on poultry writes:

The question of breeds is one over which very many battles are fought. I purpose simply to state the merits of those which I have kept or of which I have personal experience, without going further into the subject. Much depends, naturally, on where the fowls are to be kept. I have long, narrow pens, which are not big enough to keep in grass, and are therefore suitable for the fowls that bear confinement well. My other yards are each the sixth of an acre in extent and sown to grass. For the young birds there is an acre of grass, divided across the middle, and therefore not all used at once.

The non-sitting breeds I keep and find successful are black and golden spangled Hamburgs, which are not only beautiful birds, but incessant layers. The only drawback is that there eggs are small and white, which color is a characteristic of the eggs of non-sitting breeds. For the table the Hamburgs are too small, but have a flavor like the game fowl, and the golden spangled birds are, in fact, more like pheasants, both to look at and to eat, than ordinary fowls. Crossed with any large bird, such as Dorking or Rock, an excellent table bird is produced.

Leghorns, either white or brown, may also be recommended as perpetual layers. These stand confinement well, while the Hamburgs, if closely shut up, need more attention. My own golden Hamburgs bear confinement very well, but no doubt, as a rule, Leghorns are better for small pens.

The term "perpetual" layers must be taken with reservations. No fowls lay, or should be encouraged to lay, during the molting season; but, roughly speaking, these non-sitting breeds may be said to lay steadily, if pullets—which always begin at six months or earlier—for nine or ten months of the year. If hens, these can't be depended on for more than eight months. I have found Andalusians also excellent layers of large white eggs, and these are, besides, non-sitters and larger birds for the table, though not nearly as good table birds. Of the sitting breeds I will write another time.

The wheat crop of South Australia and New Zealand is reported to be 2,000,000 bushels short and of poor quality.

A milking machine, invented and patented in Scotland, for which good things are claimed, is soon to be introduced into this country.

According to Texas Live Stock Journal, in the nature of things a cow should not be milked up to the calving, notwithstanding that the practice is sometimes advocated.

Mr. S. D. Willard declares there is money in cherries, especially in sour ones.

The acting horticulturist of the Geneva experiment station places Moore's Diamond at the head of the list of white grapes for quality and value.

THE FARM AND VINEYARD

Entered at the Post Office, Erie, Pa., as second-class mail matter.

An Illustrated
Agricultural, Horticultural and Household Journal.
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BY
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ERIE, PA.

H. TONG, ... Editor and Manager.

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Trees Set in Autumn.

Autumn transplanting of fruit and other trees is still practiced by horticulturists, and there are many advantages in doing the work at this particular time. The trees that were set last autumn now require a little special attention, and it should be given to them before any new trees are set. The soil around their roots has become solid and compact, and in order for the tree to grow freely this crust should be broken. Many fruit trees show signs of dying from drought during August, but such disaster can be averted by mellowing the ground around the trees, which will act the same as a mulch and prevent the roots from becoming dry. The soil should be stirred frequently, so as to keep the surface soil moist and prevent the growth of weeds and grass. If the plow and harrow is used in the orchard they should be of the kind with short teeth, which will mellow and pulverize the soil and not tear up the roots.

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FARM AND GARDEN.

OBSERVATIONS WORTHY OF NOTE IN RURAL AFFAIRS.

Devices for Measuring Land Suggested by an Ohio Farmer in The Popular Gardening as Being Rapid and Approximately Correct.

The careful farmer knows to the very last square yard how much the area of a certain field is, and knowing, he has no occasion or excuse for making erroneous

FIG. 1

DEVICES FOR MEASURING LAND.

statements by estimates. It is not difficult to rapidly and accurately measure a field and know exactly how much it contains.

A rapid but not most accurate method is illustrated in Fig. 1. A, b, represents a half rod in distance on the ground, c, d, representing a pole just long enough to measure this distance by touching either end to the ground. The pole is first touched to the ground at a, then tilted over without moving the position of the hand until d touches the ground, thus measuring the half rod. The length of the measure will vary as the person is tall or short. Used in this way, a person does not have to stop at every measure. Fig. 2 is simply a pair of wooden compasses with legs eight or ten feet long, connected with a stay rod, so that the points are 8 feet 3 inches apart, measuring half a rod at a time. The stay rod should be detachable at one end, and there may be other holes so as to set the points at six or seven feet for laying out raspberry rows, etc. When not in use it may be folded up and set in the corner of the barn or fruit house. It is put together with light carriage bolts.

Fig. 3 represents the most accurate and convenient half rod measure for nearly level land, there being no chance for error. It can be used among growing crops as well as bare ground. It should

FIG. 2

FIG. 3

DEVICES FOR MEASURING LAND.

be strong and light and so securely framed and braced as to make the points unyielding. When not in use it may be hung on two pegs on the side of a building.

Money and time are often saved in knowing just how large a field is, especially where seeds are bought to sow it or plants to plant it. Nothing is quite so annoying as to have a shortage of a trifle, especially when a little forethought and exact knowledge would have prevented it.

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FRUIT AND FLOWERS

FRUIT ROOMS.

Small Structures in Which Fruit May Be Kept Throughout the Year.

For the smaller and cheaper structures the requisites are nonconducting walls and ventilating windows, provision being made for the admission of cool air on cool nights, to maintain a temperature slightly above freezing, and thus preventing decay through warm seasons, says Country Gentleman, from which the following plans and directions are gleaned:

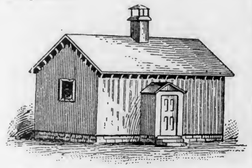

FIG. 1—EXTERIOR OF FRUIT HOUSE.

The fruit room may be a separate building, or an apartment connected with the dwelling, and separated from all other parts by means of a nonconducting wall. A building 15 by 20 will furnish ample room for all the fruit required by a common family. It may be wholly above ground or partly sunk in the earth. The advantage of excavating for a part of the space is to obtain more warmth.

A common practice is to erect a frame of 8-inch studs and cover both sides of these with boards, filling the space between the boards with sawdust; but a better way is to nail on the studs building paper before the boards are applied, the studs being placed just far enough apart to give a slight lap to the paper as the rolls are successfully applied. The sawdust is omitted, as it is liable to cause crevices by settling and to be attacked by rats and mice. If this air space and the two covers with boards and building paper are not sufficient to make a good nonconducting wall, nail vertical strips on each lath and add another covering of paper and another boarding. The roof is made nonconducting in a similar way and the room protected with double doors and double windows.

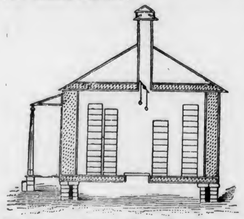

FIG. II—SECTIONAL VIEW OF FRUIT HOUSE.

But the most important requisite in preserving fruit from decay is to maintain a temperature only a few degrees above freezing through all warm weather. Two thermometers should be provided and the temperature frequently examined. By admitting cold air during nights and keeping the room closely shut in day time the fruit may be kept cool. Windows should be placed on opposite sides, so that a free current of cold air may be admitted in the night.

Instead of an earth floor there may be a slatted floor, copious openings through which admit the warmth from the earth. If the fruit room occupies a part of the basement of the dwelling it should be entirely separated from the rest of the basement by a double brick wall. Fig. 1 represents the exterior of a small fruit house, with double entry at the side, a single window at each end and a vertical wooden pipe surmounted with a ventilator. Fig. 2 is the cross section of the same fruit house. The underpinning is double, with an air space as a nonconductor of the heat and, with a free connection with the earth below through board registers or slatted work.

Elder as a Nurse to Holly and Pines.

An English authority claims that elder is well adapted for planting in exposed situations as a nurse to the holly and pines. Its hardiness and rapid growth are its principal recommendations for game cover. It will grow on almost any soil, but thrives best on deep loam moderately moist. To maintain efficient cover it requires to be cut down every second or third year. The beech, sycamore and birch can be grown as topsewood in the same situations.

Here and There.

Mr. John Thorpe, of Pearl River, N. Y., has the appointment of chief of floriculture in the department of horticulture.

It has been estimated that fully 1,000 persons are engaged in celery growing in Kalamazoo (Mich.) and vicinity, and they manage to make enough from it to live very comfortably.

At the seventh annual meeting of the Society of American Florists, at Toronto, the secretary reported the total number of members as being 926. The next place of meeting will be Washington. James Dean, of Bay Ridge, N. Y., is president of the society; secretary, W. J. Stewart, Boston.

The president of the Indiana Horticultural society said at a recent meeting: "In regard to extreme cultivation of strawberries I think that there is a medium. Too high cultivation might not pay, but a man should spend from twenty-five dollars to thirty dollars on an acre if he expects success."

What Others Say.

Ellwanger & Barry name among other promising new varieties of strawberries, Daisy, Eureka, Great Pacific, Middlefield, Mrs. Cleveland, Warfield and Yale.

Of all the grapes tried at The Rural New Yorker's grounds during the past eighteen years the Eaton makes the strongest growth. Its leaves are immense and the growth of cane remarkable.

American Agriculturist thinks it better to cut the black knots out of cherry trees and burn them rather than to apply kerosene, as some recommend. Badly infested trees should be cut down bodily and the knots burned.

To cause quick and strong growth on roses, carnations and all plants of the flower and vegetable order out or in doors try watering once a week with a little nitrate of soda solution, say a teaspoonful in a gallon of water, is the advice of The Florists' Exchange.

Garden and Forest suggests that Japanese bamboos in a small state, grown in jars, are useful for indoor decoration—a use to which they are much put by the Japanese. Bamboos are among the handsomest and most graceful ornament of gardens and plantations.

A Ventura county (Cal.) horticulturist states that he considers a fifteen-year-old English walnut tree, in good health, worth about $400.

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AMONG THE POULTRY.

Prevention and Treatment of Gapes and Other Diseases.

A correspondent writing in the New York World has the following to say: As a means of prevention from the gapes in young chickens it is admitted that they should be kept from wet and dirty places. If they be troubled with this distemper it nearly always comes from worms in the crop and throat, as chickens, like the young of most other animals, are more subject to worms than those of mature age. Onions chopped fine is a prevention, and garlic, either raw or cooked in milk, is a sure cure. The milk may be given with a spoon; also horseradish water or pellets made of the scraped or grated article, made small and crammed down their throats if they will not pick and eat it. I don't believe in fishing the worms up with a feather or crooked hair, as sometimes advised; this only gives relief, but is not a cure.

As to insects, the dust bath is excellent, both for old and young poultry. Whitewashing the walls inside is much recommended, but if in slaking the lime for this purpose a small quantity of coal tar be thrown on the lime, say one ounce of the former to one pound of the latter, by stirring, it will mix through the whitewash and make a much more effectual wash as a preventive to their intruding. The roosting bars should also be washed with this mixture.

Here is another point which will be found of use to chicken raisers: Throw about one pint of coal tar into a pile of fine sand; let it lay till the sand absorbs all it will, then roll out the lump and it will fall to pieces at once. It is a great insecticide. Scatter some through the hens' nests when putting them to sit. I will warrant they will not run away before the brood is hatched out, as I have known many to do before the discovery of this plan. If it be only scattered on the bottom under the nest it will be effectual. When young chickens become lousy, lard is recommended to be rubbed on; the lard, however, becomes far more valuable if to one teaspoonful of lard you add about four or five drops of creosote. Mix well, tip the joints of the wings, the breast bone and a very little under the feathers, in one or two places on the vertebræ, or backbone, with very little round the head and neck. This will completely banish them.

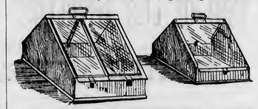
Smut in Corn.

A bulletin on corn smut from the Nebraska agricultural experiment station says: "In a general way use as many pounds of blue vitriol as gallons of water. The immersion should not last longer than fifteen or twenty minutes." Many consider a much shorter period in a strong solution sufficient. It should be remembered, however, that clean seed does not insure the crop against infection from other sources. Bluestoning the seed will not prevent injury from the germs left over in the field from smutty fodder or in the manure of animals fed with it. It simply kills the germs that may be on the seed that would otherwise develop along with it in the ground and thus enter the growing plant. The black powder consists of spores which reproduce smut, much as seeds reproduce ordinary plants. Hence the necessity of destroying all smutted stalks and ears and keeping the ground from becoming filled with spores.

Forwarding Early Plants.

Gardeners in Europe, especially in England and France, used many devices for protecting and forwarding early plants which are seldom seen in our country. Among such devices are the ones shown in the accompanying illustration, reproduced from Popular Gardening.

The use of these miniature cold frames, which are like toy houses with glass roof and open bottom, makes it practicable to start a few lettuce plants, flowers or melon hills, etc., in open ground a



HAND FRAMES FOR PROTECTING PLANTS.

week or two before their regular season. Our last year's experience with similar homemade devices for starting melon hills was highly satisfactory, says the journal already mentioned. The seeds were planted in hills, in open ground, and over each hill was placed a little frame, top slanting toward the south like an ordinary cold frame. Some small barn windows that we happened to have on hand were made use of in place of sash. The frames were removed after the plants, which grew thrifty and free from insect attacks, begun to send out runners.

Diarrhœa in Fowls.

In its first stages diarrhœa may usually be checked by feeding boiled rice with powdered chalk. Three drops of camphorated spirit on a pill of meal four times a day may be given in severe cases, and rice boiled in milk should then be the only food. Barley is the first grain fed on recovery. Bone dust is excellent as a preventive, and young chickens should be well supplied with it. This disease, which is liable to run into cholera, is caused usually by wet or cold weather, lack of fresh water and green food, or the means or shelter from excessive sun. In addition to the remedies suggested it is advised to shelter the sick birds from the sun and also from damp.

Selection of Eggs for Hatching.

It pays to select eggs for hatching beyond knowing that these are fresh and fertile, especially in regard to size. Eggs for incubation ought neither to be too small nor too large for any variety. What is wanted is the average size from the best layers of the breed desired. Smooth, hard surfaced eggs are to be preferred over the wrinkled ones or those with indentations. Some of our fanciers make a point of selection as regards the color, while others think this unimportant.

Here and There.

Australia is now shipping eggs to the British markets.

According to report, crops in the Gulf states will be late and short.

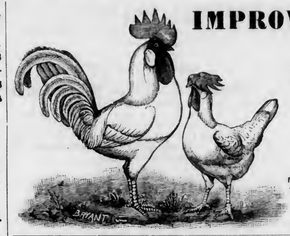
The last congress appropriated $5,000 for the construction of a fish hatchery in Vermont.

The exports of clover seed from New York from Jan. 1 to March 7 were 31,669 bags, against 39,994 bags for the corresponding time in 1890.

Grain farming, as such, according to the New Jersey's state board of agriculture's report for 1890, must be abandoned, the state being destined to become agriculturally a market garden.

A recently formed corporation, under the name of the Galveston Ramee company, has in view the culture of ramee, okra and other fibrous plants, on land lying between Houston and Galveston.

Bradstreet's makes the statement that "out of 210,000,000 pounds of cotton seed oil produced in 1888, 70,000,000 pounds were used in the mixing with lard, and that the competition with this bogus product has reduced the price of pure lard from ten down to six cents a pound."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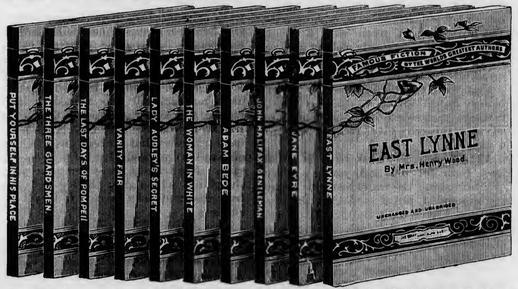

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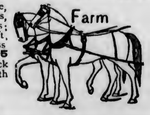


Libertyville Harness Co., Libertyville, Illinois.

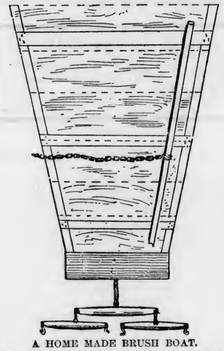
Mention FARM AND VINEYARD.

A BRUSH BOAT.

How to Load, Unload and Burn Brush with Least Expense and Labor.

For removing large accumulations of brush from orchards and elsewhere the brush boat depicted here and recently described in Rural New Yorker will be found exceedingly convenient.

This boat is made of two ordinary mud-boat planks, placed with the rear ends about eight feet apart and the front ends about four feet. The latter are fastened together by a 2-inch plank a foot or eighteen inches wide and of the proper length, bolted to the curved portion, and there are three beams of 4 by 4 scantling, one at the rear, one at the front and one at the center, and raised to clear the ground about six or eight inches. Upon these nail a covering of inch boards, and with a hook clevis bolted to the center of the plank at the front end, by which the vehicle is to be drawn, the boat is completed. In loading the brush commence at the rear end. It can project considerably if a little pains are taken to bind it with that in front, the load being kept somewhat in the shape of the boat. The easiest way to dispose of the brush is to burn it as drawn. There is no difficulty in burning green brush if a good fire is started at first with any old rubbish or dry material. Unload compactly on the fire.



A HOME MADE BRUSH BOAT.

To do this before commencing the load, place on one side of the boat a stiff pole or rail, with a chain attached in the center, and load on this, and when the load is drawn to the fire, to the other end of this chain is attached another sufficiently long to pass over the load and the fire. Then the team is uncoupled from the boat and hitched to the end of the chain, and the team goes ahead, and with proper judgment the load is placed directly on the burning pile better than it could be done by hand, and in a very short time and in the best possible condition for burning. On such a boat can be placed all any team should draw, and more than would be placed on a wagon, and the device being low, the load is out of the way of standing trees, and can be much more conveniently put on and taken off.

Agricultural Notes.

At the Michigan experiment station the best varieties of green corn for succession there prove to be Cory, Crosby, Concord, Stabler and Golden Coin.

From the Connecticut station comes the report that "cotton hull ashes of the best quality are the cheapest source of potash, free from chlorides, to be found in our markets."

The corn crop of 1890 was the smallest reported in nine years in proportion to the population, as the previous one was the largest. As stated by Statistician Dodge, the reduction is about 30 per ce-

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THE FARMER'S SIDE.

"Where we are, how we got here, and the way out."

By Hon. W. A. PEFFER,

U. S. SENATOR FROM KANSAS.

12mo, cloth - - - Price, $1.00.

There is a demand for a comprehensive and authoritative book which shall represent the farmer, and set forth his condition, the influences surrounding him, and plans and prospects for the future. This book has been written by Hon. W. A. Peffer, who was elected to the United States Senate from Kansas to succeed Senator Ingalls. The title is THE FARMER'S SIDE, and this indicates the purpose of the work.

In the earlier chapters, Senator Peffer describes the condition of the farmer in various parts of the country, and compares it with the condition of men in other callings. He carefully examines the cost of labor, of living, the prices of crops, taxes, mortgages, and rates of interest. He gives elaborate tables showing the increase of wealth in railroads, manufactures, banking and other forms of business, and he compares this with the earnings of the farmer, and also wage-workers in general. In a clear, forcible style, with abundant citations of facts and figures, the author tells how the farmer reached his present unsatisfactory condition. Then follows an elaborate discussion of "The Way out," which is the fullest and most authoritative presentation of the aims and views of the Farmers' Alliance that has been published, including full discussions of the currency, the questions of interest and mortgages, railroads, the sale of crops, and other matters of vital consequence.

This book is the only one which attempts to cover the whole ground, and it is unnecessary to emphasize its value. It is a compendium of the facts, figures, and suggestions which the farmer ought to have at hand.

THE FARMER'S SIDE has just been issued, and makes a handsome and substantial book of 280 pages. We have arranged with the publishers for its sale to our readers at the publishers' price. The book may be obtained at our office, or we will forward copies to any address, post-paid, on receipt of $1.00 per copy. Address

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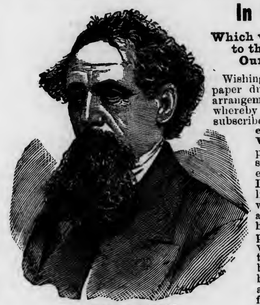

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Wishing to largely increase the circulation of this paper during the next six months, we have made arrangements with a New York publishing house whereby we are enabled to offer as a premium to our subscribers a **Set of the Works of Charles Dickens,** in **Twelve Large and Handsome Volumes,** with a year's subscription to this paper, for a trifle more than our regular subscription price. Our great offer to subscribers eclipses any ever heretofore made. Charles Dickens was the greatest novelist who ever lived. No author before or since his time has won the fame that he achieved, and his works are even more popular to-day than during his lifetime. They abound in wit, humor, pathos, masterly delineation of character, vivid descriptions of places and incidents, thrilling and skillfully wrought plots. Each book is intensely interesting. No home should be without a set of these great and remarkable works. Not to have read them is to be far behind the age in which we live. The set of Dickens' works which we offer as a premium to our subscribers is handsomely printed from entirely new plates, with new type. The twelve volumes contain the following world-famous works, each one of which is published *complete, unchanged, and absolutely unabridged:*

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FRUIT AND FLOWERS

TRELLIS FOR BLACKBERRY VINES.

How an Ohio Horticulturist Keeps His Vines in Convenient Shape.

An Ohio horticulturist describes his management of blackberry plants in The Rural New Yorker. He says:

My plan is to take good fence posts five feet in length, set one at each end of a row, 3½ feet in the ground, leaving twenty inches above ground. I use No. 12 galvanized wire and draw it as tightly as possible. However long the rows may be a post set firmly at each end is sufficient. After the canes are tied to the wire they form a perfect support, and there are no stakes in the way of the hoe. I top my canes at three feet, just the right height to be handy for the pickers. By running the wires twenty inches from the ground they pass below the branches, so that it is much more convenient to tie them, and less twine is required, while the tops are in better shape for picking.

I remove the old canes as soon as the fruit is off, and tie the new ones to the wire to prevent their being twisted off by the wind. I am well aware that a large number of fruit growers dispense

WIRE TRELLIS FOR BLACKBERRIES.

with stakes or wires; but after having used both for three years I regard them as indispensable if one wants the crop to be the best. I would not advise any one to use sawdust as a mulch for anything, as its effects on the soil are not desirable, and it also makes an excellent breeding place for injurious insects.

To keep the soil moist, cool and rich each winter I cover a space about two feet wide along the rows with manure, and start the cultivator as soon in the spring as the soil is in fit condition, and continue its use until August. Raspberries require the same treatment if one wants to be sure of a good crop. During the drought at fruiting time in the past season I noticed that the neglected berries on the wild as well as the tame bushes were drying up, while mine were ripening nicely and in large quantities.

Nut Planting.

Nuts may be planted either in the fall or spring. The objection to fall planting lies chiefly in the danger of their being disturbed and carried off by some of the small animals. The following plan which comes highly recommended, seems to be an excellent one, not only for preserving the seeds from disturbance, but also for keeping them in a condition favorable for germination in the spring, somewhat similar to that furnished by nature in the forests: Soon after their maturity, and certainly before they have become thoroughly dried, select those of good size, large kernels and thin shells. Place them in boxes of moist soil and sink the boxes to the level of the surface of the ground in some place where they will not be disturbed. In the spring the nuts may be planted in nursery rows or in the spots where it is desired the trees shall stand. Much more attention is now being paid to nut culture than formerly, and it is found that by selection and culture nuts improve almost as readily as fruit.

Chrysanthemums.

Either for using in the greenhouse or conservatory up to and after Christmas time, or for cutting, the late flowering chrysanthemums are of great value. These late kinds furnish us with a large quantity of flowers of medium size under ordinary cultivation. It is not a good plan to aim at obtaining the flowers of abnormal size, as if this is done the chances are that some will come fasciated or deformed, besides which three or four smaller flowers are infinitely better than one of extra size as far as utility is concerned. An important point in the culture of late chrysanthemums is that of commencing to feed them far too early in the autumn; a strong growth is thereby made, which will at times fail to set any buds at all; those buds also which may be thought safe will turn blind or fail to grow as they should do. But little loss will be sustained (if any) by deferring the application of manurial stimulants until the plants are housed. This work need not be done quite so soon as in the case of the main crop, there being no buds susceptible of injury by slight frosts. It is not well to risk the plants out too far into October.

A VASE OF ADA SPAULDING CHRYSANTHEMUMS.

The decorative value of chrysanthemums cut with long stems and loosely arranged in vases has created a demand for varieties specially suited to this purpose. According to Garden and Forest the flowers should not be too large, and should excel in breadth. They should have abundant foliage, so that no other contrast to the flower is needed than a good background. In the illustration is shown a vase of the flowers of the Chrysanthemum Ada Spaulding, which has gained a high rank among the newer kinds of this type. The plants have a vigorous habit, the flowers are massive, well imbricated and usually colored in a pleasing way. The illustration, however, is not meant to display the special qualities of this variety, but to indicate one of the best ways in which chrysanthemums can be employed for indoor decoration.

Tuberous Begonias.

If tuberous begonias are planted in a soil composed of two parts manure composted with turf, and one part well rotted leaf mold, an enormous quantity of very large flowers will be produced. The tubers produced will also be much larger than those grown in the ordinary way, says a well known French authority.

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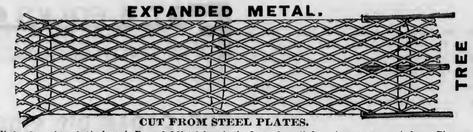

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A book on diseases of domestic animals, which should present a description of each disease and name, the proper medicines for treatment in such condensed form as to be within the means of everybody, has long been recognized as a desideratum. The work before us appears to cover the ground completely. The information is arranged so as to be easily accessible—an important consideration. Each disease is first described, then follows the symptoms by which it may be recognized, and lastly is given the proper remedies. The different medicines employed in all diseases are described and the doses required are given. The book is copiously illustrated, including engravings showing the shapes of horses' teeth at different ages. An elaborate index is a valuable feature.

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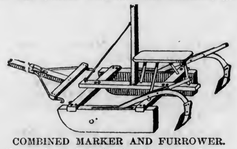
FARM AND GARDEN.

SUBJECTS SURE TO INTEREST THE COUNTRY READER.

A Combined Marker and Furrower Designed and Described by a Young Farmer in The Rural New Yorker, and Possessing Points of Importance.

This implement is shown in the annexed cuts. The runners are cut from three inch material, 3½ feet long and 10 inches wide. These are placed at the proper distance apart and held in position by cross pieces in front and behind, each end being notched into the runner and fastened down with two coach screws 4 inches long and three-eighths of an inch in diameter. Over these cross pieces and in the center between the runners an-



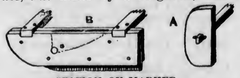
COMBINED MARKER AND FURROWER.

other piece is bolted and allowed to extend six inches forward and a foot or more backward. A V shaped piece of iron fastened upon this receives one end of the gauge, which is firmly braced by a three-eighths inch iron rod connecting with a ring bolt at the forward extremity of the center piece, thus admitting of motion from side to side only in a perpendicular plane. This does away with all cords attached to the harness, and variation from unequal pulling of the team is avoided.

Into the center piece and rear cross piece stout legs of some elastic timber are inserted, which support a seat at a proper height. The front corners of this seat are rounded and the center of the front end cut slightly hollow. It is placed just far enough forward to allow this hollow part to rest solidly against the gauge when in a perpendicular position, as in the engraving, holding it securely while turning or in driving to and from the field. To prevent wear a piece of strap iron is tacked across the front end of the seat, and another on the gauge where it strikes the seat. The elasticity of the legs allows the gauge to pass the slight swell on either side. The driver can operate this without leaving his place, as would be necessary with other forms, and when raised both hands are free to use the lines.

Of course the distance from the center of the machine to the center of the gauge marker must be exactly twice that between the centers of the runners. The gauge marker is made comparatively light, 14 or 15 inches high, and but 9 or 10 inches long, the object of making it so high being to carry the pole above the runner. This is rather a disadvantage, for it is much more liable to break by catching on stones and roots than if it were lower and shaped differently (see second cut, Fig. A).

Another improvement of doubtful general utility, but especially suited to his case, was made by a neighbor, whose



SECTION OF MARKER.

farm is rather hilly. He found that his marker would slide down hill despite every effort, and to remedy this he made his runners of two 1½-inch pieces bolted together, with a piece of a crosscut saw blade at the bottom of each, extending nearly the entire length of the runner and two inches below it, as shown in the second cut (Fig. B). It proved a success with him, but turning is rendered much more difficult, and where not absolutely necessary it is thought best to omit this feature.

To make a furrower of this machine cut out a deep but very narrow mortise in each runner (see dotted lines in the second cut, B). These are made to receive the forward ends of wrought iron beams, carrying a large cultivator shovel a short distance behind each runner. Handles are attached to these beams, and when turning or driving to and fro the beams are thrown forward until they rest against the front edge of the mortise in a nearly upright position. The beams should be placed as low as possible, that they may not interfere with the gange while in use. A 2-inch hole cut through just below the mortise allows the escape of any dirt that may fall into it. While just this form of implement may not be needed on many farms, there are good points about it which may be made of practical use by nearly every farmer.

The Indian Games.

The Indian games, about which much is being written and said of late and which have made fine exhibitions at some of the poultry shows among the fowls for fancy, are birds of great physical development and fine plumage. The fanciers, who have welcomed this breed with delight, claim that it is of value to the farmer. The Fanciers' Journal says:

The Indian game has many excellent qualities, and while its apparent gawkiness may not suit those not accustomed to it, the weight of the bird and its fine carcass when dressed will surprise the most skeptical person. An Indian game crossed on the Wyandotte has produced the heaviest and quickest maturing chickens on record. What Indian games will do as layers we are not prepared to answer. We have one pen of birds on trial, and there are four more pens in the neighborhood.

Latitude and Potatoes.

All my potatoes are northern grown, writes a Pennsylvanian in the American Garden. He says: "From years of experience I have found that northern stock is far superior to southern in vigor and yielding qualities. This is more apparent in the early varieties than in the late ones because of the fact that the early dug tubers pass the line of maturity and are on the down grade to decay before the planting time comes in spring."

Kerosene as a Paint.

Kerosene cannot be used in place of linseed oil advantageously by mixing colors with it for painting on wood. Kerosene strikes into wood at once, and if used in that way would soon leave only a coating of dry color which would easily brush off. Kerosene is refined from the crude oil petroleum, and for preserving wood from decay or preventing the rusting of iron by covering its surface with an oily coating the latter is by far the preferable form for its use. It should simply be put on with a brush like paint, but wholly without any coloring matter.

Here and There.

Professor Roberts, of Cornell university, calls attention to the fact that at last there is a machine for harvesting corn.

Bradstreet's says: The total consumption of pork products, exclusive of lard, in the United States last year is estimated at 3,653,000,000 pounds, which would make an average annual consumption per capita of about fifty-eight pounds.

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FRUIT AND FLOWERS

CARE OF ROSES.

One Method of Protecting Outdoor Roses During the Winter Season.

We never take our roses from the ground to protect them, having learned that it can be done much more effectually where they stand. What is called an "open" winter is much more severe upon roses than is steady cold, even though it be below zero. Our method of protection for winter is to draw the earth up around the base of the plant for perhaps six inches. A quantity of leaves is then put over it and the whole is covered with bagasse, the refuse from an amber cane mill. Evergreen boughs are equally good over the leaves, and I have no doubt but that cornstalks might answer if there was no grain to draw mice.

Roses are not greatly injured by light frosts, and the everbloomers will yield a handful of buds almost until snow flies.

Roses should not be covered till the approach of real winter. On that last day when the ground freezes a little all day, put them into their winter overcoats, and the chances are that their sleep will be sweet and their awakening joyous.

It is not safe to remove all the covering from the bushes at once in spring, as a cold dry wind does them as much injury as a freeze. We throw the coarse litter from the top, remove the leaves and throw back the litter, leaving it till the branches have time to dry off and harden. When all the covering is removed, the bushes are pruned, the earth leveled and cultivated and a generous coating of stable manure is worked into the soil.

Filling Up Around Trees.

There are a few species of trees that will bear filling up around them almost as far as you please, but the majority will not. Should one desire for any reason to try it, it is advised in the New York World to make a little pile of loose stones around the base of the tree—a loose conical wall a few inches thick and a little higher than the proposed fill. It is believed it will protect the tree from any injury that might otherwise result. The little mound of loose stones will prevent the entire exclusion of air and also the pressure of earth against the tree, which in the case of many species would cause a decay of the bark and a suspension of the flow of sap. Leave a few inches of the top close to the tree uncovered.

Success with Dutch Bulbs.

Procure good stock. Plant in rich, mellow, well drained soil. They like some sand; they dislike stagnant moisture. Cover hyacinths and narcissus five inches, tulips four inches, jonquils, scillas and colchicums three inches, crocuses and snowdrops two inches, anemones one inch deep, and you will not be far amiss. Bulbs may be planted from two to three times their diameter apart. After planting cover the bed with coarse litter; it breaks the force of the winter's cold, prevents undue freezing and thawing and helps the quality of the bloom. Follow these simple directions and Popular Gardening will vouch for results.

The scale lice on the bark of your fruit trees will soon hatch out, and when they do be ready for them. Wash the trees with soap and water or use whitewash with ashes. Be sure and do it "on time."

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And American Gardener's Assistant.

VOL. 5. NOS. 8 AND 9. ERIE, PA., DECEMBER, 1891. FIFTY CENTS A YEAR.

The Carpet-Rag Needle Again.

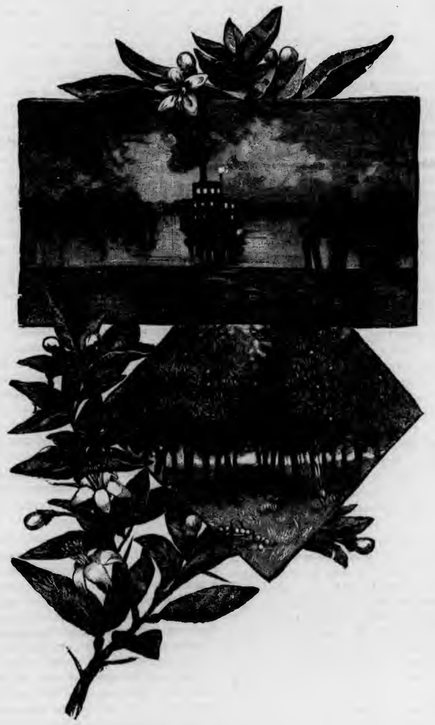
With all due deference to "N. D. Lee" and her good intentions in recommending the "carpet-rag needle," I must warn the housekeepers not to fall too violently in love witn it at first sight.

We did, to our sorrow, It was many years ago, when I was a girl at home. We were making a new carpet, and though there were three of us, it seemed slow work. One day a friend brought us one of the "carpet-rag loopers, (as he called it), screwed into the middle of a board one foot square. Seating himself beside the rag-basket, he grasped two rags, laped them as though going to fold them over and sew them, but instead gave them a quick jab on the point of the "looper" tucked one end through the eye, pulled them off, drew the fastening snugly and repeated the operation time and again, while we stood by in "petrified amazement." How we regretted the time we had wasted sewing rags! We kept the "looper" busy almost day and night: even the men folks took a hand, it was such fun. But when the carpet came home!—the carpet she had felt assured would excel all the carpets she had made in her forty years carpet-making, —what ailed it? Those looped ends hung out all over the carpet. In a dim light it looked as though covered with burdocks, and to walk over it with bare or stockinged feet was like walking upon spoiled corn. Clear across the room one could tell the sewed rags from the looped ones. We spent hours with scissors chipping ends, bettering it somewhat; but we did not make it smooth and nice, of course.

That "looper" was banished to the garret in disgrace, and hand-sewing again held sway, until I discovered how to sew them on the machine.

Lap and fold them as if to sew by hand; start in at the edge, run slantingly to the middle, and run out at the edge again; slip another in place not stopping to break thread until you or the thread gives out; then clip threads, and wind.

I sew, while one child clips thread and another winds up the rags, and we get along famously,—perhaps not quite as rapidly as in looping them, but the result will be much more satisfactory. —S. JERIE ELDER in *Housekeeper's Weekly.*



Another Ostirch Plume Chrysanthemum.

Most of our readers will remember the sensation that was caused by the introduction into this country from Japan, four years ago, of the first chrysanthemum of this class, (Mrs. Alphens Hardy.) This plant for which Messrs Pitcher & Mande paid the modest sum of $1,500. Two years later Peter Henderson imported a pink variety of the same class, called Louis Boehmer. Since then Pitcher & Mande have succeeded in raising an improved Mrs. Alphens Hardy, this improved variety having a more robust habit. They are also said to posess a pure yellow flower.

H. Tong, of Erie, the successful raiser of the new sedling chrysanthemum, has succeded in raising the Ostrich Plume variety that bids fair to eclipse them all; similar in color to a variety sent out by Peter Henderson & Co. last spring, called sunray, containing various shades of yellow, bronze and red, beautifully incurved and as strictly covered with hair as Louis Boehmer while the habit of growth is all that can be desired.

Show this paper to your neighbor and tell him it costs 25 cents a year. If he don't want to subscribe for a whole year he can have it on trial at the following rates: three months, 10 cents; or, six months, 15 cents. Subscribe now, while the offer is open.

J. H. Laing, Jr. of J. H. Laing & Sons, florists of London, after a talk with Chief Thorp of the Florticulture division, became a World's Fair enthusiast, and offered to donate 10,000 begonias and send over two men to care for them during the Exposition. Chief Thorp says that he thinks $500-000 worth of orchids will greet the eyes of visitors on the opening day of the Exposition.

If you have anything for sale advertise in the FARM AND VINEYARD. We guarantee good results, provided you offer the right articles. Many of our readers write and inquire where they can purchase full blooded cattle, poultry, pigeons, dogs, sheep, pigs, etc., hence our offer to insert breeders' cards at the low rate offered on page 5.

INV. '60

The Gardener's Assistant.

Popular Talks on Law.

BY WM. C. SPRAGUE, ESQ.

For the FARM AND VINEYARD.

A COMMON FORM OF PROMISSORY NOTE AND ITS MEANING.

A great proportion of promissory notes given for machines provided that the title to the machinery purchased shall remain in the manufacturer until paid for. What do you understand this to mean? Very many people believe that it means that *if they do not pay for the goods, the goods belong to the manufacturer, and that his only resource is to take them back;* and so we find persons saying, "The goods are yours; I will return them to you, but I will not pay for them." They look upon the transaction rather as a loan of the goods. We frequently find attorneys who cannot harmonize a "purchase and sale" with an agreement that the title shall not pass until the article is paid for, and yet this condition does not in the least effect the transaction. It is a sale and a purchase of the goods, and by the note or contract given, *the purchaser has agreed to pay for the goods, or to settle for them at a certain time.* Take the case of the sale of real estate. I may sell you forty acres, and you pay part down and agree to pay the balance in one year. We agree that I hold the title until the deferred payment is made. Does this agreement make the transaction any the less *a sale*, and are you any the less bound to pay the deferred portion of the price agreed? Can you say to me at the end of the year, "I have concluded not to purchase the land, so will not pay the note," and thus escape liability, on the ground that the land never became yours by purchase? No. The true statement of the law is thus: A sale made with a condition that the title shall not pass until the purchase price is paid is a valid sale, and the seller can hold the buyer to payment of the price, and if he does not desire to take the property, he can can refuse to do so and sue for the purchase price, and again, if he so desires (unless there are statutory provisions to the contrary), he can take back the property, and in some states, retain the amounts paid, and in others he can retain a reasonable rental value and damages suffered by reason of wear and tear, etc.

In no case can the purchaser return the goods, and escape payment, unless on breach of warranty, or unless there be some special agreement allowing him to do so. We challenge any one to point to a single case in or out of the books which so holds. A farmer recently asked advice on this point of the writer. We advised that he pay the note. "But," said the farmer, "I don't have to do so. I can give up the machinery. It is not mine. The note says so, and I can't pay the note, and will cancel it by giving up the property," and he went away angry, because we could not see that his promise to pay did not mean what it said. It does look curious to a man that he can purchase a thing, and yet not own it. And yet in the sense that he may buy a thing and not receive title to it until the happening of a contingency, *this is exactly true.* Don't waste money fighting against this stubborn fact—that you agree to pay at a certain time without condition or qualification The question of who holds the title in the meantime does not effect the right of the seller to insist upon and enforce payment.

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Alsike Clover.

Alsike clover has been grown in several sections of the country with considerable success, and farmers consider it a great addition to their fodder crops. It is not so valuable probably as red clover, but it can frequently be made to grow on soil where it seems impossible to get a "catch" of red clover. For this reason alone the plants should be considered a valuable addition to the list of grasses.

In this country alsike has not attained a wide spread popularity, but in Europe it is very extensively grown. Wherever it has been introduced here, however, and given a fair, impartial trial it has been liked and grown annually. The wild alsike is much inferior to the cultivated variety, which, according to chemical analysis has many nutritive qualities. In some respects its digestable food compounds have a higher per centage than those found in red clover. It is rich in albuminoids, and so balance other rations that are lacking in these materials, it becomes very valuable.

Alsike seed should be taken from the first crop when the heads are brown and mature. The seeds readily fall out of the pods, and if threshed when thoroughly dry they will be injured by the process. If properly threshed and cleaned, alsike seed should yield as much as clover per pound, and nine pounds of pure seed should be sufficient quantity for an acre. Alsike will succeed on light dry soils, but it does better on soils that are too wet for other clovers, and reaches its highest perfection on damp loans or clays. On soils where other crops will not grow large yields of alsike are often obtained. Extremes of weather do not effect it much. Cold apparently does not hurt it, and drought does not kill it, although it reduces its yield. It does better in the moist season, and sometimes when planted with other plants it will last for seven or eight years.

This clover has a very superficial rood system, and for the best results the surface soil should be manured. It is much better to sow it with other plants, such as timothy or red clover. It should be cut when in flower to get the highest nutritive value from it. It is not so good for pasture as white clover, but it ranks very high even in this respect. From these points about alsike it will be readily admitted that it is destined to take a high rank among our grasses. It will be grown on many farms where clover does not succeed well, and it is safe to say that these are many.

If you have any article you wish to sell, advertise in FARM AND VINEYARD.

Is Growing Strawberries Profitable?

BY THOS. D. BAIRD.

For the FARM AND VINEYARD.

This depends entirely on the person engaged in growing them. I have come to the conclusion that to make strawberries profitable, one must have a love for the plants themselves, otherwise they will neglect them.

Strawberries are like all other crops, they will not pay under poor culture. poor soil and poor manure or none. I know that soil make a difference with strawberries, but my little experience is that the fertility of the soil make a greater difference than its texture or any other quality. I believe strawberry growing is very much like building a house, the soil or ground is the base upon which to lay the foundation, but the beauty size and service of the house will depend more on the money, labor and care bestowed on it. It depends more on the manure cultivation and varieties than on the soil.

In the first place very few are liberal enough with their manure. I know some will tell you that the soil can be too rich. But with a rich soil and good cultivation we may not make strawberry growing profitable by not setting out the best varieties. Some varieties that grow large and fine, although they do not yield so much as smaller kinds, always command the highest price, and if there is a glut in the market, will not be affected by it, but sell readily at paying prices. Still in selecting varieties one should select the variety that has the most good qualities, large size, productive and of good quality. When growing for a distant market firmness is a necessity, and should be considered, for a fine berry when picked from the vine may be shaken into a perfect jelly before got into market, and cannot be sold for anything.

Getting berries in the market early make a great difference in the profitableness of the crop. In order to do this the variety has something to do, but from my experience situation has more to do than the variety. Select a southeastern slope for an early bed, then set the earliest, large, productive kind, and then success is sure. And then to prolonging the season, set in another slope the largest productive variety. I have known late berries to bring fancy prices.

Another thing we should observe, that it costs no more to grow good varieties than inferior sorts, neither does it cost any more to cultivate a row that has been well set with plants than one where the plants were set too far apart, the former forming a perfect row with all the ground fully occupied and no vacancies, while the latter is very imperfect and the ground not half occupied, the crop on the former being near double to that of the latter, both costing the same to prepare the ground, to cultivate and for labor. The rows well set are very profitable, while the firuit on the others is produced at an expense or at least with no profit; and thus it is that so many fail at growing strawberries.

Many take no notice of this, but the picking, handling and preparing for market are equally as important as the variety, soil and cultivation. In picking, care should be used not to injure the plants. When plants, though fine and well filled with berries, are roughly handled in picking they will fail to bring the remaining berries to such size and quality as if they had been handled gently and carefully.

Many do not pay any attention to sorting their berries when picking but put all grades, large, small, illshaped, ripe and green in the same basket. The berries should be put in grades, putting in each basket berries of a uniform size and color. This will of itself often give them two or three cents better price per quart, just from appearance, and in a crop of several thousand gallons it makes a wide difference in the profit. Filling the baskets with uniform berries from the top to bottom make a difference in the profit. A man here at my town who had good berries injured his sales by putting extra fine berries on top and inferior ones at the bottom. Giving good measure will put more on the profit side of the ledger than most growers think. In conclusion, I would say to whatever degree all these points are observed and cared for, to that degree strawberry growing will be found profitable.

Ever purchaser of our Paint Book gets a year's subscription to FARM AND VINEYARD.

Storing Snow.

Mrs. M. H. L, Waseca Co., Minn. Last winter we had a new experience in putting up ice which, perhaps, will be of interest. The ice crop was short, and when our supply was about half stored, the grippe came among us, and by the time it went away the weather was not suitable for making ice. This gave Mr. L. a chance to work out a theory which he had in mind for years, namely: he took drifted snow and put it in the ice house, packing each load and wetting it with water from the well, finishing up each night with all the water the snow would take. When full and frozen it was covered with saw dust, the same as ice. The house is not a perfect one by any means, still the snow lasted until used up, which was on the 20th of September. The verdict is, that snow is prefered to hauling ice far.—*O. J. Farmer.*

You will do yourself and us a great favor, my friends, if, when writing to advertisers, you say you saw their advertisement in FARM AND VINEYARD. They always use FARM AND VINEYARD oustomers well.

It pays to grow sheep for mutton alone, and the money got for the wool is clear gain. Sheep will flourish on a short range. They yield readily to will in breeding. With successful handling and wintering, a flock make certain and fair price for wool, when mutton alone will pay expenses, there is nothing to prevent flock owners from becoming rich in a few years.—*Field and Farm.*

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THE ERIE CHRYSANTHEMUM SHOW.

BY REPORTER.

For the FARM AND VINEYARD.

The Erie Chrysanthemum Club held their third annual show, Nov. 5, 6 and 7, which proved a grand financial success; one cannot fail to notice the good these shows are doing to the cause of horticulture. A few years ago it was a rare thing to see a Chrysanthemum plant in a private dwelling in this city, but what was then the exception is now the rule, and our best citizens are in with each other in adorning their persons as well as their dwellings with this beautiful Queen of Autumn. A Queen loved and admired by all her subjects.

On entering the vast hall the first object that attracted attention were the immense Palms, from the gardens of the late Wm. L. Scott, (not for competion,) these were magnificient specimens showing what can be done with these noble plants with proper care. The first premium group of fifty greenhouse plants exhibited by H. Tong, contained some splendid specimens, as did also the group of fifty plants from the greenhouses of Mrs. N. Niemeyer, which was awarded the second premium. The twenty-five greenhouse plants exhibited by Mr. John Frost, contained some good clear well grown plants. In the classes for Chrysanthemum plants all the premiums went to H. Tong and H. A. Niemeyer, Mr. Tong taking first premium for large plants, and Mr. Niemeyer taking first premium for plants in six inch pots, Mr. Tong making no entries in these classes. In miscellaneous plants Mr. Wm. Honegrett took first premium for a splendid collection of Begonias, and Mr. H. A. Niemeyer first for twelve Palms. Mr. Tong exhibited (not for competion,) some well trained Chrysanthemum plants, a Baloon, a Bishop Mitre and a pyramid of magnificent proportions, also some grafted plants, on one of which we counted no less than eight distinct varieties. These plants were a good illustration of what can be done with the Chrysanthemum by anyone who makes this noble flower their special study.

In the class for cut blooms of Chrysanthemums, H. Tong took all the first premiums, the second premium being withheld and the third premium awarded to Mr. H. A. Niemeyer, these blooms not being considered worthy of second premium. The cut blooms exhibited by Mr. Tong were certainly a grand lot, all exhibited on vases on long stems, either three or five blooms in each vase making a grand display. What made this collection more interesting were the many new varieties raised and named by Mr. Tong, two of which, *Thora Strong*, a beautiful lemon yellow, very large full flower, and *Mr. Richard Townsend*, a large flower, measuring nine inches across, of a beautiful purplish violet color, received first-class certificates. *Banquet*, buff color. *Mr. Wm. L. Scott*, a splendid white, a large petaled variety of good substance, promises to become a standard variety. *Massassauga*, rosy pink. *Anthony Wayne* and *Pride of Erie* received special mention. *Mr. Richard Townsend* is certainly a grand variety, and unless we are very much mistaken will take a prominent position at the next year's show. Another variety calling special mention was named *Orange Queen.* The nearest approach to an orange color of any other variety yet dissimenated, showing up distinct from any other variety. *Nellie A. Tong*, crushed strawberry in color; a beautiful incurved flower, and has the quality of showing its true colors by gaslight better than any other variety. *Wm. L. Scott*, crimson with a beautiful silver reflex, was still considered to be the best of its type, standing up like a giant on its long stiff stems. Another seedling that drew attention from every visitor to the show was named *Mr. J. F. Downing*, a single flower; the only single flower in the colection, large pure white petals of good substance, slightly incurved, making the flower somewhat cup shaped; and the centre of the flower which was raised fully an inch, and over an inch across was a very dark emerald green. There was no blosom in the show that attracted so much attention as this variety. There were also many other very meritorious new varieties, as well as some splendid old varieties in this collection.

Mr. J. C. Vanghan, of Chicago, made a good exhibit. One variety called *Waban*, was much admired, it is certainly a grand variety. *Senator Hearst*, a good white, wase also in this colection.

There were some new Geraniums exhibited by Messers. Storrs & Harrison, Painsville, Ohio, and cut Carnations by Mr. Chitty, of Patterson, N. J. Some Carnations were sent by Mr. Wm. Swayne of Kennett Square, Pa., but six blooms and half of the box was all that reached Erie. This shows the fally of sending cut flowers for exhibition by mail. Mr. Chitty's flowers came by express and arrived in first-class condition, and if there had been more varieties, would undoubtedly taken a premium.

In the class for floral designs designs, Mr. H. Niemeyer received fourth, and Mrs. N. Niemeyer third premiums. The designs were good, Mr. Sarrer of Cleveland, making a very good exhibit; Mr. Honegrett coming in second for dinner table centre pieces. Mr. Frost displayed a good arrangement for dinner table decoration, a ship in full sail, which showed a great amount of taste and skill in the arrangement, but as this would only be serviceable for special occasions, it was passed over by the judges.

In the amature class, Mr. Phillip Hausman took first premium for curious plants. Mrs. Walther, conservatory plants. The Soldiers' and Sailors' Home made a very creditable display of greenhouse plants.

Mr. Allis was awarded the premium offered by the editor of FARM AND VINEYARD for the best collection of fruits, and Mr. Zuck was awarded the premium of Vegetables.

Taking the show all in all, the whole display was effectively arranged and great credit was due to the committee of management; Mr. Couse making a a good superintendent of hall, while too much cannot be said in praise of the president, Dr. I. B. Schlaudecker, who was here, there and everywhere, wherever his services were most needed, to whom the club was indebted more than anyone else for the success of the undertaking. Honor to whom honor is due.

We cannot close this report without a word of praise for Mr. E. Neuberger, the recording secretary, who though very buisy, was never so buisy but what he could spare the time to show the reporters and visitors around the vast hall, and explain the different exhibits; another noteworthy feature of this splendid exhibition.

Winter Dairying.

BY ALBERT H. RHODES.

For the FARM AND VINEYAND.

ELK CREEK, Sept. 29.—Dairying in the past few years has not paid very heavily, and still where carried on in its best form, and gilt edged butter manufactured, there is always a reasonable profit in cows; but there has been several booms in dairying, and cheese and butter factories have been built in almost every neighborhood.

And now for results. Three-fourths of these plants are now idle, and their general construction is such that they are illy adapted to other uses, and are therefore nearly useless. But it is not the condition of the dairying, nor the reason of that condition that we wish to discuss, but how shall we best make a success of this much maligned business. Almost all dairying is performed through the spring and summer months at present, and the winter dairying is rarely indulged in by our farmers, but as there is no time when the farmer has so many conveniences for the business as in the fall and winter months, and there is no time of the year when the farm business does not push him like this; and then cold weather is far more favorable to the care of milk than when the mercury jumps towards the nineties, and at times even higher; apples, second crop grass or clover, sowed corn and roots can be had in abundance.

To make winter dairying a success we should start right, not only in the line of cows, but in the preparation of food in abundance, calculated to encourage a plentiful flow of milk.

First, then, as to the cows. When you are ready for your cows, purchase hiefers that never had calves, coming in from October first, not later than the middle of November if possible. The reason why you should do this, is there is no trouble in keeping such hiefers in fall levring if they once commence aright.

You will have to weed out your dairy every year as well as to replenish it, and when you once get cows suitable for the business, they can be profitably milked till they are a dozen, and in some cases sixteen years old.

Your hay should be cut early for this business, and secured without rain or exposure. You will need a ton or two of mill feed, bran and shorts combined being about the best attainable for common purposes.

There should be large quantities of carrots, beets, turnips and refuse cabbage and fruit. All these persuaders fed with good early cut hay and as much raven or second growth as possible, will cause your cows to return a plentiful quantity of good, rich milk, from which you can make gilt edged butter worth seventy-five cents to one dollar a pound, if you take proper care of your milk. But it is necessary that your milk should be absolutely clean, not contaminated by foul odors, and receptacles should be perfectly sweet, else you will have anchored in ruin trying to make winter dairying a success.

Your stables should be cleansed and dusted with saw dust, if attainable, or not the dust and shavings of a planing mill, chaff from your grain, or even road dust, might be used to lay the odors and make your stable sweet. Slack lime should be sprinkled where the liquid manures are to sweeten the air.

These precautions are very necessary to making winter dairying a success. They are absolutely more necessary than to be over particular with your milk and cream without them.

The cows should be thoroughly cleaned before milking, and should be milked through a strainer which will catch any stray thing which would fall in to your milk. Your celler where you set your milk must also be as clean as a lady's parlor, and have no roots or vegetables in it; and every receptacle must be absolutely sweet and pure. Butter made thus will always sell.

BEE NOTES.

When to put Bees in the Cellar.

Many suppose it better to leave them out as long as possible—say, until the holidays. I do not concur. With bees, as with other animals, hardships do not harden them. It does not pay to leave an animal out until it is "Spring poor" before you stable it. Neither does it pay to leave the bees out after the warm days have gone. They eat more outside, and this is the very thing we wish to avoid, both on account of economy, and health of the bees.

If you could put them into a repository of just the right temperature, and if it could be maintained from Oct. 15 to April 15 at so nearly what the bees require, that they would consume not to exceed ten pounds per colony for the six months, I should say it was economy to house early.

I have been in the habit of commencing to carry mine in the latter part of October, and usually finish in November, but have sometimes taken the last in as late as Christmas. I find the ones carried in first in as good condition in the spring (and they are always the last one out), after a confinement of six months, as the colonies taken in later with a confinement of only four months.

After the honey season is over, and the nights get cold, you will notice how sluggish the bees become. Now if put into winter quarters in that condition of sluggishness, and kept in such a state, they will endure a longer confinement than many suppose. It is activity that wears the bee out. The greater her activity, the shorter her life.—EUGENE SECOR, in the *Farmer and Breeder.*

Useful Household Recipes.

CHICKEN PIE.—Take a well grown young chicken, cut up, put in a saucepan, cover with water, season with salt and pepper and stew slowly until done. Line a large pan with dough, put in the chicken, with a quarter of a pound of butter, a teacupful of cream and seasoning; pour in the water in which the chicken was boiled, cover the top with rich pastry and set in the stove to bake. Serve with gravy.

SALMON SALAD.—Open a can of salmon, or take one pound of fresh boiled salmon, pick free from all bones and skin; pour over half a pint of mayonnaise dressing, mix well, lay on a bed of crisp lettuce or celery leaves.

SLAW—Chop half a head of cabbage very fine. Put a teacupful of vinegar in a small saucepan, add a tablespoonful of butter, two beten eggs, half a teaspoonful of mustard, a little salt and pepper; stir over the fire until thick, pour over the cabbage and set in a cool place until ready to serve.

MASHED POTATOES.—Peel a dozen potatoes and drop in a kettle of boiling water, and boil; when done, mash quickly until smooth, add a teaspoonful of butter, half a cupful of cream, a little salt and pepper. Beat with a fork until light. Serve in a hot covered dish.

LIMA BEANS.—Take dried Lima beans soak over night. Drain, cover with boiling water and cook until done; take up, pour over melted butter and season with pepper and salt.

STEWED TOMATOES.—Open a quar can of tomatoes, put in a saucepan and cook fifteen minutes. Mix in a teacupful of stale bred crumbs, cook slowly, for half an hour longer, add a tablespoonful of butter, with salt and pepper.

BOILED ONIONS.—Take a dozen medium sized onions, put in cold water and remove the skins. Put in a saucepan of boiling water, add a teaspoonful of salt and boil until tender; drain and take up carefully in a heated dish, pour over cream sauce and serve.

TURNIPS.—Wash and pare turnips, cut in slices, put in a saucepan, cover with boiling water and boil until tender; drain, mash fine, add butter, salt and pepper.—*Ladies Home Companion.*

A Series of Popular Talks on Law.

BY WM. C. SPRAGUE, ESQ.

For the FARM AND VINEYARD.

CROP LAW.

Crops are that which is cropped, cut, or gathered; the valuable part of what is planted in the earth, as fruit or harvest.

In the eye of the law crops are devided into three classes—away-going crops, growing crops, and out-standing crops. The first are crops sown by a tenant, whose lease will expire and who will go away before harvest time, in which case he is not entitled to the same. This would appear to be just, since the tenant must know that he cannot be there to reap the benefit of his sowing; but if his estate depends on an uncertainty, as the life of some one, or an act of God, it is otherwise. Now, generally, if a lease ends in the spring, the tenant is allowed the crop of winter grain sown in the autumn before, and the straw is a part of the crop. It is said that crops raised by a tenant who enters subsequently to a mortgage, pass to a purchaser at foreclosure sale, unless gathered before the sale. If a tenant at will is turned out by his landlord he can reap what he has sown, or, as the law says, take his emblements. If one who is a tenant for life dies before harvest, his executors have the right to take the emblements. The second are any annual crops growing or maturing, raised by cultivation; as corn or potatoes, but not the fruit of an uncultivated orchard. The third are crops in the field—not gathered and housed, without regard to its state. It is "outstanding" from the day it commences to grow until gathered and taken away.

In some states *growing crops* are regarded as personalty, and leviable with the right to harvest it; in a few states, however, the courts hold them to be realty. Growing crops planted by the owner of the soil constitute a part of the realty, and a sale of the land carries the property in the crop to the purchaser; and this is so notwithstanding an oral reservation thereof by the grantor. But, an annual crop planted by the owner of the soil, if mature, and to be gathered immediately, may be sold by him personaly, for personaly it will become when severed from the land; and the fact that it is still growing and immature has been held to make no difference. The lien of a mortgage on a growing crop continues on the crop even after severance, whether remaining in its original state or converted into another product, so long as the same remains on the land of the mortgagor; and such lien is not lost by a tortious removal by a person having even constructive notice of the lien; and the mortgagee may maintain an action for the conversion.

Whether a contract for the sale of a growing crop is for "an interest in or concerning lands," and required to be in writing under the Statute of Frauds, seems to be answered in conformity with the intention of the parties. And so as to growing grass, growing trees, and fruits; although, according to some cases, cultivated crops only are to be considered as chattels, while the spontaneous growth of the land remains a part of it, at least until ripe and ready for removal. Whenever the parties connect the land and its growth together, the growth comes within the statute.

The *Rural and Poultry World* is a very neat and practical journal, published at 50 cents a year. Anticipating the wants of our readers, we have made arrangements to supply the *Rural and Poultry World* and FARM & VINYEARD, both one whole year for 50 cents.

"I know what I'm going to give pa this Christmas," said Arabella Cloverblossom. "What, my dear, asked her mother. "A nice woolen comforter. It will be nice to wear when Ned comes to take me tobogganing."

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The Poultry Yard.

Don't overfeed your fowls. In the wild state, even the chicken knows when it has had enough, and never overfeeds. But the civilized fowl has lost all its wild sense and has no domesticated gumption to take the place. Watch carefully at feeding time and see how much the birds will eat up clean with a relish, and you can tell how much to feed them.

If every general farmer, in any district, within reasonable distance of a town or railroad, would spend as much time, labor and cash on 200 fowls as he does on ten acres of grain, the net profits off, the poultry would be at least twice as great as that from the grain.

Every farmer who has chickens should arrange to have his hens lay in winter, for properly cared for they are more profitable at this season than during the summer months.

Jackson county, Ind., has a curiosity in the form of a hen with her entire body covered with a brilliant coat of male attire, giving the hen the every appearance of a rooster, save that she was minus the comb and head dress. She crows in good style but continues to lay eggs.—*Rocky Mounoain Husbandman.*

A well conducted poultry farm will pay well, but poultry can be made more profitable to the farmer than even the exclusive poultry grower. The farmer grows his own feed, both vegetables and grain, and has ample time in winter to care for his flock; and with care and good quarters there is no question about an abundance of eggs.

We want an active agent at every fair this fall. Write for our terms, it will pay you.

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No paper ever made such a liberal offer. Four strong grape vines—four of the best varieties in existence—and a year's subscription to this paper for only 50 cents. The Concord is still the best flavored and the most profitable black grape grown. All grape growers who grow grapes for profit grow the Concord. The Niagara is the best white grape, and only a few years ago the vines of this variety sold for a fabulous price. The Brighton is the best flavored grape, later than the Concord and Niagara. Wyoming Red is acknowledged to be the best red grape of recent introduction; a comparatively new variety, but sufficiently tested to give it a place here as one of the best four grapes. Now is the time to stock your garden. For every four subscribers you send us at 25 cents each, you get four vines sent, postage paid. These vines are one-year-old No. 1 vines, grown by Geo. A. Josselyn, the well known and reliable nurseryman, of Fredonia, N. Y., and will be packed and sent direct from Mr. Josselyn's establishment at Fredonia.

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Department of Agriculture.

The November issue of *Insect Life* (Vol. IV, Nos. 3 and 4), the periodical bulletin of the the Division of Entomology of the U. S. Department of Agriculture, contains an illustrated article by Professor C. V. Riley, on the habits and life history of the 12-spotted Diabrolia, an insect long familiar to gardners as an enemy to squashes and melons, but which has within recent years been found to attack in the larva state and damage seriously young corn. A history of the facts bearing on this phase of the habits of the insect is given, together with a full account of its habits and developments from the egg to adult insect.

It also contains an editorial article by Mr. L. O. Howard on "The Larger corn stock-borer (*Diatræa saccharalis* F.), an insect which for the past three-quarters of a century has been recognized as a serious enemy of the sugar cane in the West Indies and for a less period as an enemy of cane and corn in the Southern States, and which has been particularly abundant in the cornfields of Louisiana, where it was first recorded as early as 1857. It has since that period slowly spread throughout the cotton belt, and with the present season has rather suddenly appeared in Maryland and Virginia, seriously injuring corn. A full bibliographical history of the insect is given, together with a careful amount of its life history and habits, illustrated by a number of text figures. The article will be of particular interest and value to the southern planter and also to the corn grower of the Mississippi Valley, as the insect manifests a tendency to migrate north ward as evidenced by its appearance in Varginia and Maryland.

We are still offering the premiums previously offered. Don't you think you could get us a club if you tried.

An English gentleman desiring to test the endurance of a horse, drove 1,000 miles to a dogcart, passenger and and baggage weighing over 800 pounds. The journey was done in nineteen consecutive days, an average distance of over fifty-two miles a day. The longest distance, sixty-eight miles, was covered on the last day. The road was covered at random, and led from London to York, Edinburg, Glasgow, Carlisle, Nottingham and London again. The horse was fifteen hands high, what is called "well-bred," and returned home, according to the veterinary, no worse for the journey.

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FARM AND VINEYARD, Erie, Pa.

Trees in the Fall.

By N. J. Shepherd.

For the Farm and Vineyard.

Were I advising any one when to buy fruit trees or plants of any kind, I should say in the summer, with the understanding that they were to be delivered in the fall before freezing weather. Not to set out but to heel in and have ready to put out early in the spring. I have set out a large number of trees of all kinds, and am satisfied that, taking all things into consideration, spring setting is the best, provided of course, that the work can be done early in the season.

The disadvantage in waiting until in the spring to have the trees delivered, is that it will so often occur that they will not be received until late, often a month or six weeks after they might have been set out had they been heeled in the fall before. It is nearly always best to order trees and plants in good season so as to be sure of getting what you want, and also of getting them in good season.

Another advantage in heeling in the trees in the fall and setting them out in the spring, is that it aids in the formation of small fibrous roots In taking up the trees in the nurseries a large proportion of the roots is cut off and left in the ground, and the top must be cut back in proportion. Heeling in the trees gives more fibrous roots, and the trees will make a better growth than if they are taken up in the nursery and set out in the orchard. And this advantage is certainly in favor of making out the orders in the summer, having them delivered in the fall, heeling in carefully and then setting them out in the spring. Plowing the ground in the fall, manuring if necessary, and cultivating or harrowing well into the soil, making as far as possible all the preparations, so that at the first favorable opportunity in the spring the trees can be set out where they are to grow.

There is more certainty of getting what you want and of having them when it is the best time to put them out, giving them a better opportunity of making a good growth before hot dry weather sets in.

Fall planting will answer in some localities, but often it will be necessary to mould in order to prevent injury from thawing and freezing, and it is always necessary to protect them from rabbits and mice.

But whether set out in the spring or fall, it is not a good plan to wait until the trees are wanted before ordering.

Look at this! The Farm and Vineyard and the *Buffalo Express*, both a whole year for $1.00.

Putting up Ice.

Ice is almost indispensable to the dairyman for bringing his milk and cream to, and keeping them at the proper temperature. Aside from its use in the dairy, ice is a luxury which well repays all the cost of putting it up and the wonder is that so few farmers lay in a liberal stock. Ice can be kept in the simplest kind of a structure. The essential conditions are that it shall be closely packed in a mass, that there shall be no air spaces at the bottom, that it shall be surrounded, (packed in) by a good non-conducting material in sufficient quantity, that it shall have a tight roof to exclude rain, and that ventilation is provided. A cheap board building with the cracks battened answer about as well as a costly structure with double walls filled in. The keeping of the ice does not depend so much on the walls of the building as upon the kind and amount of material with which it is packed. Saw dust or dry tan bark furnish the best packing materials. But these in many localities are difficult to obtain. Next to these dry cut straw or chaff is probably the best, and almost any farm can furnish the straw. Cut straw is better than whole, because it packs closer and makes a better non conductor, though whole straw is often successfully used. In the latter case the space for filling between the pile of ice and the walls of the building needs to be wider than if cut straw were used. In case cut straw is used we would leave a space of sixteen inches for filling, but with whole straw of two feet. The sills of the building should rest on the ground, or on a wall built for them, allowing no air to enter underneath. We would lay tile a foot below the surface inside, with its outlet some distance away, to keep the bottom dry, but tile should not open into the building to admit air.

A foundation of at least a foot deep of the packing material, saw dust, tan or straw, should be laid over the bottom, on which to build the pile of ice, and the blocks should be cut as nearly as possible of uniform size so as to pack closely, and it is well to go over each layer as it is put in and fill all cracks with pounded ice so as to make the pile as nearly solid as possible. When the pile is finished, or as it progresses, the filing between it and the sides of the building should be made and tramped down as solidly as possible, and a covering of at least two feet in depth be made over all. Ventilation should be provided for by openings in the gables or a ventilating shaft going up through the roof to permit the escape of the moist air which gathers about the ice. The door should be for convenience made in two sections, an upper and lower, with boards laid across the one inside of the frame holding the packing material in place.

The proper size depends upon the amount of ice that will be required. Ice will measure about forty cubic feet a ton, and ten tons would be a liberal supply for family use. This would be equivalent to a pile 8 feet long, 8 feet wide and 6½ feet high. If we allow two feet on all sides for packing space, the building to hold this amount in the form above given would need to be 12x12 feet with nine foot posts. A door in the gable would be needed for putting in the top layers and taking out ice early in the season. As cheap and good a way for a cheap building would be to set posts in the ground three on a side (except the end where the doors are) with 2x4 for plate and middle and bottom gisths, and board up, down and batten, banking up at the bottom to exclude air. The roof should project considerably on all sides so as to shade the sides, and if it could be built under the shade of trees it would be all the better. When expense is no object, and a permanent structure si desired, a brick or stone foundation should be put in, on which to lay the sills, which should be beded in mortar, and double walls can be made by using 2x8 or 2x12 for studding, and filling the space between the outside and inside boarding. Ice should be cut and put up only in freezing weather. If cut and handled when the temperature is above freezing, the blocks splinter and crack, and its keeping qualities are considerably injured.—*New England Farmer.*

FARM AND FIELD AND GARDEN

PLANTS UNDER GLASS.

Opinions of An Expert on the Proper Night Temperature for Plants.

The constantly increasing use of greenhouses in the cultivation of plants makes a knowledge of the best methods for their management of general importance. In growing plants under natural conditions out of doors it is well known that they undergo wide variations of temperature in the changes from day to night. It is not, however, as generally known that such changes in temperature are equally necessary for successful plant growing in glass structures where artificial heat is used. On this subject Mr. William Saunders, superintendent of the gardens and grounds of the agricultural department at Washington, says that one of the most prevalent and injurious errors in the management of greenhouses and other plant houses is that of keeping the temperature too high during the night. To maintain as high a degree of heat during the darkness as during the light is a practice opposed both to science and the results of experience.

It is also told that plants grown in a nearly uniform temperature under glass seldom ripen or mature their wood in a thorough manner; the buds are immature and make feeble growth, and the whole plant contracts a delicate habit of constitution which renders it incapable of withstanding the slightest neglect without injury. On the contrary, plants constantly subjected to a suitable lowering of night temperature are more robust, have short jointed and matured growths; flowers not only expand more fully but remain longer in perfection; fruits are better colored and flavored and more perfect in every respect than those developed in an atmosphere of uniform heat and moisture. Greenhouse plants require no heat during the night further than to exclude frosts.

Another injury consequent upon a high night temperature during winter arises from the extraction of moisture from the atmosphere. To maintain an inside temperature of even 50 degs. when the external is near zero involves a rapid generation of heat, and as the capacity of air for taking moisture increases in proportion to its rise a great demand is made upon the plants and everything in the house capable of giving up moisture. The quantity of water thus carried off may be seen by the deposition of ice on the inner surface of the glass after a night of severe frost. Ice one-fourth of an inch in thickness is often found under these circumstances, the result of condensation and freezing of the water carried from the contained moisture in the atmosphere and from the surface of the plants. The parched and unhealthy aspect of the plants subjected to such treatment is sufficient evidence against the practice.

Dressing and Shipping Poultry.

With the exception of the Boston and New England markets poultry is rarely drawn. For the New York market neither crop nor intestines are drawn, though the former must be free from food, as the city ordinance prohibits the sale of poultry unless the crops are empty. Section 1 reads thus: "That no turkeys or chickens be offered for sale in this city unless the crops of such turkeys and chickens are free from food and other substance and shrunk close to the bodies. That all fowls exposed for sale in violation of this ordinance shall be seized and condemned; such of them as shall be tainted shall, upon examination, be destroyed and the rest which is fit for food shall be used in the public institutions of the city."

To insure the highest market prices for poultry the birds must be well fatted, crops empty when killed, cleanly picked, with the skin unbroken and free from bruise or other blemish; carcass thoroughly cooled, but not frozen, previous to packing. Pack in boxes with a layer of clean straw—rye straw is best—between the layers or birds placed in the same position in which they roost.

Ship poultry for the various holiday seasons so as to reach the commission merchant from two to five days in advance. Avoid having your poultry reach its destination on a Saturday. Mark each package legibly, specify what it contains. Send the invoice by mail.

Carniolans versus Italian Bees.

The editor of the Missouri Beekeeper says that for three years he has been comparing the Italians with the Carniolans, keeping them in the same yard. He says that with a steady flow of honey the Carniolans stored more surplus than the Italians, with about the same per cent. of swarming. With a poor season, the Italians came out ahead. He says the Italians, as we all know, were prolific up to the commencement of the honey flow, then checked brood rearing and filled a part of their combs with honey, while the Carniolans kept up brood rearing until late in the fall, using up their stores and in many cases requiring feeding for winter. The Carniolans swarmed many times when no honey was coming in. He did not find them as gentle as the Italians. During the three seasons the Italians gave more honey with less labor and stings.

Honeydew for Winter Stores.

"1. Will bees winter safely on honeydew in a dry cellar of an average temperature of 45 degs.? 2. If not, can I winter them on combs from an extracting super filled with sugar sirup and no pollen; reserving the brood combs filled with honeydew for next spring?" were queries asked and answered in American Bee Journal by G. W. Demaree as follows: 1. There are many kinds or grades of the so called honeydew. I have seen a little of it that ought to kill anything that could be induced to swallow it; and I have seen more of it than would be perfectly safe as a winter food for bees. 2. Sugar sirup will winter bees about as well as good honey, and you need give yourself no anxiety about pollen. Bees need pollen to start brood rearing in the early spring.

The editor replied: 1. That depends on the quality of the "bugjuice" and the winter temperature. In a mild winter it might do, but in a severe season there would be great danger in its use. Many whole apiaries have been ruined by its use, and it would be wise to advise caution. 2. Yes; that will be a safe way of disposing of the honeydew.

FRUIT AND FLOWERS.

POPULAR ROSES.

Fine Hybrid Perpetuals for Cutting, for Exhibition and for Forcing.

That fine hybrid perpetual, Baroness Rothschild, raised by Pernet and sent out in 1869, is still one of the most distinct roses we have; remarkable for its upright, sturdy habit and large handsome blossoms, which are of a beautiful shade of pale shining flesh. Baroness Rothschild was the first of its race, and owing to its singularly distinct characters and other good qualities, this rose took an immediate foothold, both as a garden and exhibition variety.

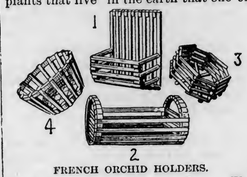
A FAVORITE WITH FLORISTS AND GARDENERS.

Baroness Rothschild, however, possesses another claim upon the rosarian's admiration and affection. To this rose we are indebted for the first really useful white hybrid perpetual rose our gardens ever held. Mr. George Paul's White Baroness, a fair English rose that American rosarians hailed with delight, and one that the younger and more massive Merveille de Lyon has not as yet been able to supersede, are direct sprouts from the Baroness, while as for seedlings, the late Mr. Bennett's Her Majesty, among others, owes its parentage on one side to the same source, a fact that proves this variety to be of immense value to the hybridist. As a garden plant this rose is extremely useful, especially if it is used for the purpose of massing. Its hardiness of constitution and the long period of time that the plants retain their vigor and blooming power are other recommendations. It is also admirably adapted for forcing, being one of the most popular for this purpose.

With regard to cultivation it is one of the most accommodating, but from its habit of growth naturally dwarf plants are more effective than standards, plants in this latter form presenting rather too formal an appearance to be desirable. It succeeds well on seedling brier and brier cutting stocks, and best of all on the Manetti. It is also worth noting that this beautiful rose grows and flowers most freely on its own roots. For exhibition, and indeed for general purposes, it will be found desirable to thin out the lateral shoots that are generally thrown out almost as soon as the terminal flower bud has formed on the leading shoot. In our cut is illustrated a fine specimen of the Baroness, necessarily reduced in size.

Artistic Receptacles for Orchids.

Ordinary clay pots, subject, however, to some variation in shape, are the receptacles most commonly employed among our orchid raisers and, from a cultural point of view, are unobjectionable. But, as American Garden says, their appearance is then so similar to plants that live in the earth that one of



FRENCH ORCHID HOLDERS.

their chief distinctions is lost. The French have holders specially made for orchids, some of which are here reproduced. The manger form shown at Fig. 1 is especially useful for the decoration of walls where ornamental foliage plants of fernlike or trailing habit are mingled with the orchids in the happiest manner. These paniers are found admirably adapted to the culture of bromeliads of small size, many ferns such as adiantums, certain polypodiums, davallias and the selaginellas. They can be made the most pleasing additions to greenhouse and conservatory, the upper parts of which are often bare of vegetation. The log form (Fig. 2) is said to be better than the heavy logs or pieces of bark on which the Brazilian oncidiums, cattleyas and lælias of spreading form are grown.

To those who are willing to take a little extra trouble or expense is recommended the octagonal form, shown at Fig. 3, which is especially adapted for strong specimen plants. For stanhopea and acineta an especial shape is made (Fig. 4), with a bottom of copper wire through which the flower shoots can find ready egress. The foregoing are only a few of many forms which these receptacles take on, and which can be bought in France. Here, however, they must be constructed, which is not a difficult matter.

These may be made of any wood that does not readily decay. American Garden, already quoted, advises against the mistake of oiling or varnishing them, as is sometimes done, for then the surfaces are rendered unsuitable for the plants to attach themselves and are detrimental to their well being.

Instructive Points on Grape Culture.

It is announced that a French grower has discovered a new method of pruning the grape. The cut is made at the node above the point where it is intended the end of the wood shall eventually remain, at the same time destroying the bud found there. The stump thus left is removed the following year, when the death is complete and when at its base a collar has been formed, which soon closes after the dead wood has been removed to its level. The theory is that under this method the wood dies slowly and without decomposition of the tissues.

The practice of changing crops more or less systematically has always been found advantageous, and various theories have been offered explanatory of the principles upon which the benefits of rotative cropping depend. The same results have been found in the culture of the grape, as stated by Mr. Saunders, superintendent of grounds and gardens at Washington, who has for a number of years experimented in this matter.

Wintering Monthly Roses.

The monthly roses are only half hardy, and consequently are likely to be winter killed when the thermometer falls 35 degs. below the freezing point. The best way to protect them, according to excellent authority, is to bend the branches down and fasten them securely within two or three inches of the ground by tying them to stakes driven for that purpose, or if close enough they may be tied to each other. Then spread dry leaves or rough litter over them to a depth of say six inches. This should not be done, however, until severe cold weather sets in, so that nearly all the leaves are off the plants and they are thoroughly ripened, which is usually about Dec. 1 in the latitude of New York state. This covering should not be taken off until all danger of severe frost is over, say about April 1.

Protecting Trees from Rabbits.

In severe winters, when snow lies upon the ground, rabbits are especially destructive to fruit trees, the young trees in apple orchards often being greatly damaged by them, if not entirely ruined, from their gnawing the bark until they are completely girdled. Surrounding the trees with wire netting is one of the ways recommended for their protection, and it, of course, would be effectual though somewhat troublesome and expensive. Another way is to wrap the stems with cloths saturated with oil or tar, which also is objectionable for the reason that it requires so much time where there are many trees.

Among other things I have tried a wash of whale oil soap and lime, put on with a brush, with considerable success. Still another thing I have used, and which so far seems to have the desired effect, is assafœtida. I put a teaspoonful of the tincture in half a pailful of liquid clay and apply it with a brush as high on the trees as a rabbit can reach, and as long as the odor remains it seems to keep them away. It is best to apply it two or three times during the winter. How effective it might be where the rabbits are very numerous and hungry I cannot say, but in my own case it has succeeded as well as any kind of wash I have tried, says a correspondent of the New York World.

A Graceful Palm.

Numbered with decorative plants of decided value is the palm Dracæna ludivisa, depicted in the accompanying illustration.

DRACÆNA LUDIVISA, OR FOUNTAIN PLANT.

This attractive palm has gained by its graceful drooping habit the popular name of fountain plant. It is frequently employed for the centers of large vases and baskets. Dracæna ludivisa is doubly valuable, for it is not only well adopted to indoor culture, but is one of the most desirable of plants for beds in the open ground.

Agricultural Experiment Stations.

Agricultural experiment stations are now in operation in all the states and territories except Montana and Idaho. During the year new stations have been established in Wyoming, Oklahoma and Washington. Of the fifty-five stations in the United States, fifty receive their support wholly or in part from the United States treasury. The stations employ 450 persons in the work of administration and inquiry. The results and processes of their experiments are described in the station bulletins and reports.

Refuse vegetables will be greedily eaten by fowls and is good food in conjunction with grain.

Horticultural Brevities.

When cuttings are being rooted by amateurs in small tin or earthen vessels placed in sunny windows, the process can be forwarded by painting the receptacle black, the color absorbing the heat and imparting it to the sand or earth, thus facilitating the starting of roots.

English Garden says it is now tolerably safe to assert that the best of all stocks for roses is the brier, and yet it is but a very short time ago that a word said or written in disparagement of the Manetti was sufficient to arouse a sharp controversy upon the merits or demerits of particular stocks.

If you wish to advertise anything, anywhere, at any time, write to GEO. P. ROWELL & CO., No. 10 Spruce St., New York.
Mention Farm and Vineyard.

TANSY PILLS! Safe and Sure. Send 4c. for "WOMAN'S SAFE GUARD." Wilcox Specific Co., Phila., Pa.
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FOUR TRIAL NUMBERS, With great premium offers, on receipt of 10 CENTS, and addresses of 10 MARRIED LADIES. Only 50 cents a year. Best monthly in the world, for the price. Address WOMAN'S WORK, Athens, Georgia.
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RAILROAD STOCKS AND BONDS Bought and Sold for Cash or on Margin on New York, San Francisco, Philadelphia or Boston Exchanges. Investment Stocks and Bonds a Specialty. A. R. CHISOLM & CO., Bankers and Brokers, 61 BROADWAY, NEW YORK. [Established 1876.] Weekly Circular free.
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We send the marvelous French Remedy CALTHOS free, and a legal guarantee that CALTHOS will STOP Discharges & Emissions, CURE Spermatorrhœa, Varicocele and RESTORE Lost Vigor. Use it and pay if satisfied. Address, VON MOHL CO., Sole American Agents, Cincinnati, Ohio.
Mention Farm and Vineyard.

$50 TO $100 A MONTH for local and traveling men to sell our FRUIT AND ORNAMENTAL STOCK. Address for terms, E. B. RICHARDSON & CO., NURSERYMEN, GENEVA, - - NEW YORK.
Mention Farm and Vineyard.

IF YOU WANT TO Beautify and adorn your homes with Fruit and Ornamental Trees, Vines, &c, you can SAVE MONEY by buying of us. Write for our prices. Address GEO. B. ARNOLD, Benton Center, Yates Co., N Y.
Mention Farm and Vineyard.

WANTED! By the Lake Shore Nurseries, of Erie, Pa., Men and Women Wanted To Solicit Orders for Nursery Stock. Work permanent and remunerative. Great advantages in the way of quick selling specialties. Fine Outfits Furnished FREE. Write for terms, etc. L. W. CARR & CO., Erie, Pa.
Mention Farm and Vineyard.

THE FARM AND VINEYARD

Entered at the Post Office, Erie, Pa., as second-class mail matter.

An Illustrated
Agricultural, Horticultural and Household Journal.
PUBLISHED MONTHLY
BY
The Farm and Vineyard Publishing Co.
ERIE, PA.

H. TONG, ... Editor and Manager.

TERMS.

Single subscribers 50c. per year, 25c. for six months. Two copies for one year 90c., Three copies $1.20. Four copies $1.50, Five copies $2.00, and a copy free to the person getting up the club. Ten or more copies 25c. each per year. All subscriptions payable in advance. No receipt will be sent for subscription unless requested. The fact that you receive the paper is proof that we have received your remittance correctly. If you do not receive the paper promptly, write us that we may see that your address is correct. If subscribers change their address, the old as well as the new address must be given.

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Ordinary display, ten cents per line, (agate)
Reading Notices, fifteen cents per line, (agate)
Liberal discount for large space or long time ads.
No humbug advertised at any price.

ERIE, PA., DECEMBER, 1891.

Our Premium for Eight Subscribers.

Send eight subscribers and get eight grape vines free.

Musical.

The Knabe Piano, which has such a wide popularity, is considered by many experts to be superior in every way to any other piano in the world. The success of this piano has only been attained by years of careful study, and the Knabe, with its excellent singing qualities, its great power, the elasticity of touch, and superior workmanship, is justly the favorite.—*Boston Evening Traveler.*

Our Premium for Twenty Subscribers.

For twenty subscribers, at 25 cents each, we will send you twenty-five grape vines free by express or mail. Now is your time to try your hand at canvassing. But all orders and remittances must, in all cases, be sent direct to us at this office, and we will forward the orders for the grape vines to Mr. Josselyn. Address,

FARM AND VINEYARD,
Erie, Pa.

A Popular Fence.

The Buck-Thorn fencing advertised in another column. has been manufactured in Trenton, N. J., for 10 or 12 years, and in many sections of the country is very popular. It is claimed to make the most substantial and safest barbed fence known. Being flat, with a single longitudinal rib, the largest possible surface is presented to view. It is plain to be seen. No part of it is made wire. The barbs are short, broad at the base, and only one-quarter of an inch apart at the point. One of its chief merits is that every part of the strand is perfectly coated with zinc, the process of galvanizing being the final one. Therefore it never rusts. Our readers who are interested in the fence question would do well to write to THE BUCK-THORN FENCE CO., Trenton, N. J., for their circulars.

A Wonderful Flower—The Black Calla Lily.

(*Arum Sanctum.*)

A magnificent variety from the Holy Land; the leaves are large and very wavy, of a rich green color, veined in light green, and resemble exactly those of the Calla Ethiopica. The plant produces one large and sweet-scented flower, raised on a slender but vigorous stalk of brown-red shading to green at the upper end. The flower is about fourteen inches long and four inches broad, of a brilliant dark purple color and green underneath, somewhat wavy at the borders and curled at the smaller end. The spike rising from the centre of the flower is about ten inches long, velvet like and quite black. The whole plant makes a most stately and elegant appearance. Dry roots, $1.00 each.

HOW TO GET A BULB OF THIS WONDERFUL FLOWER ABSOLUTELY FREE.

Take a copy of FARM AND VINEYARD and go around among your friends and neighbors, show them the paper and tell them they can have it a whole year for only 25 cents, they will be only too pleased to subscribe; they would have subscribed before if they had seen the paper. Get eight subscribers and send us the names with $2.00 and we will send you one of these wonderful bulbs free. Address,

FARM AND VINEYARD,
Erie, Pa.

If Yon Think

Advertising in the FARM AND VINEYARD don't pay, read the following:
EDITOR FARM AND VINEYARD:

Dear Sir.—Enclosed find check. Payment in full for first quarters advertisement of Hall's Catarrh Cure. Results during the quarter have been very satisfactory.

Respectfully yours,
CHENEY MEDICINE CO.

We want a bright boy or girl in every township, to take orders for FARM AND VINEYARD, and our beautiful picture, Christ Before Pilate. The paper a year, and the picture, both for 50 cents. It sells on sight. Some of our boy and girl agents are making from $5 to $20 a month. Write at once for terms.

W. G. Tilghman, Palatka, Fla., being a stock breeder, discovered nature's law that governs the sex, so as to have either male or female at will. No humbug as he will send it to you to be paid for when you are satisfied as to its merits. Write to him for particulars.

We will send to any address in the United States the *New York Weekly World* and the FARM & VINEYARD, both one whole year for a dollar bill. Now is your time to subscribe.

How to Get the Four Best Varieties of Grapes Free.

If you will get us a club of only four subscribers at our regular clubbing rates, 25 cents each, we will send free to any part of the United States one Concord vine, one Brighton vine, one Wyoming Red vine, and one Niagara vine. These four vines alone are worth a dollar bill.

Spraying fruit has received an ad vertisement that will result in making known its merits far and wide. The New York City Board of Health recently condemned grapes on the market that showed signs of poison on the stems, and had tons of them destroyed. The hasty action of the Board caused a grape panic. An investigation showed that the grapes had been sprayed with a solution of the Bordeaux Mixture, and that traces of the sulphate of coper remained on the stems. The mater was referred to the Department of Agriculture, which has for several years been recommending the spraying of grapes with this mixture, as a pre ventative against fungus diseases. The department officially replied that over a ton of grapes, sprayed eight times with the mixture, would be required to furnish a single poisonous dose. After consumers understand it, they will not hesitate to purchase perfect fruit because of the means used to make it so, as long as they are harmless—*Farm and Fireside.*

The beautiful pictures, Christ before Pilate and Christ on Calvary, are still offered. Either picture and a year's subscription to this paper, for only 50 cents.

Agricultural Experimental Station.

NEW HAVEN, Sept. 8th, 1891.
JOHN HENRY JENNINGS:

Dear Sir.—The wood ashes brought from F. R. Lalor, Dunnville, Canada, and sent by you to the shation, has been analyzed with the following results:

Potash, soluble in water,	11.14 per cent.	
Phosphoric acid,	- 1.27	"
Matters, insaluble in acid, (sand etc.)	- - 6.39	"

For commercial unleached ashes the sample is exceptionally rich in potash, being richer in this ingredient than any wood ashes heretofore analyzed at the station, not excepting some which we prepared ourselves from various kinds of wood. (See report 1883, page 39. Pages 109 to 114 of our report of 1889, contain matter of interest in this connection.)

Valuing potash as we do in cotton hull ashes, at 5½ cts. per pound, your ashes are worth $12.25 for the potash alone.

Very truly yours,
A. L. WINTON, Chemist.

"What did she die of?" "She overloaded her stomack with turkey and mince pie on Thanksgiving!" "Oh, what a lovely death—how I envy's her corps?"

If the FARM AND VINEYARD is missing any month, write directly to this office and we will promptly forward a duplicate of any copy, to which you are entitled.

ACTIVE AGENTS WANTED in every village and township. You can make money during the winter months. Address for particulars, FARM AND VINEYARD PUBLISHING CO., Erie, Pa.

Beware of Ointments for Catarrh that contain Mercury,

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is ten fold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, and acts directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co.

☞Sold by Druggists, price 75c. per bottle.

Don't subscribe to any paper till you have written to us for our prices. In most all cases we can give you two papers for the price of one.

Country Farmer—Ha! ha! is it really true that you poured boiling water down a hen's throat to make her lay boiled eggs?

City Farmer—Oh, yes, but my partner did still better—he tried it on a rooster.

Any person who has no use for any of our premium offers, should write for our liberal cash commission to agents.

The ice house question can be summed up as follows: any cheap structure with good drainage and no circulation below; good ventilation above; proper space between ice and sides, filled with non-conducting material. The bugbear of expense need deter no one from storing ice.

By providing a proper bottom ice can be piled on it and a building put over it latter.

Special Clubbing Offer.

If you wish to take any other paper or magazine in combination with FARM AND VINEYARD, it will pay you to write to us and get our prices. We have secured special rates for subscribers of FARM AND VINEYARD, which, if taken advantage of, will allow you, in most cases, to get two papers for the price of one.

The following are a few of the leading papers and magazines. A complete list will follow:

		Farm and Vineyard.	Our Price for Both.
The Rural New Yorker, price	$2.00	$ .50	$1.90
" American Garden, "	2.00	.50	1.90
" Farm Journal, "	.50	.50	.50
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" Cosmopolitan, "	2.40	.50	2.00
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FARM AND GARDEN.

SUBJECTS OF PRACTICAL IMPORTANCE TO AGRICULTURISTS.

A Folding Rack Invented but Not Patented, by an Ohio Farmer and Recently Described, with Appropriate Illustrations, in The Country Gentleman.

The rack here illustrated is put together entirely with bolts. Take two pine planks, 10 inches wide, 1½ or 2 inches thick and 14 feet long; bolt eight cross pieces on these, lay a tight board bottom, bolt on cross pieces at each end, 2 inches thick (Fig. 1). Make this the width of your wagon, to fit between standards. Cut in notches for standards, or nail on blocks or strips, so that the rigging will not slip backward and forward; then screw or bolt on each side a piece of iron about 10 inches long on the bottom of the rack outside for the wheels to rub against.

AN UNPATENTED FOLDING RACK.

Now, for the rack or side pieces, take eight pieces of pine, 2 by 5 inches, 4½ feet long; put hole through each, 16 inches from ends that you intend to set the box, and cut the ends so as to fit against the sides of the box; then bolt them together, and they will form four cross pieces (Fig. 2). Now take a strong board, about 1 by 10 inches, 14 feet long, having your cross pieces placed 3½ feet apart, bolt your boards, one on the upper edge of each row (as shown in Fig. 3). Then you can fold it up, or open out when in use. Now make your standard for the front (Fig. 4) 7 feet long and 3 by 2 inches, and bolt on the front end of the rack a piece of heavy iron in the shape shown in the cut (Fig. 5), so as to make two loops, and let the ends of the standard pass into the loops, and bolt it.

AN UNPATENTED FOLDING RACK.

Make the standard for the hind end of one piece. 3 by 2 inches (Fig. 6). Bolt on a piece of iron, making one space for the standard to pass into (Fig. 7). Bolt it. Bore three holes in the top of the rear standard for an iron rod to put your binding pole in; also, on the top cross piece on each end of the rack, bolt on a heavy strap iron the shape of loop or square to put standards through before they pass into the loops on the bottom cross piece.

Long or Short Stubble.

American Cultivator says: "Most large grain farmers have a greater amount of straw than they can use with profit. It makes it more difficult to get the grain under shelter when the reaper is run close to the ground. Hence if grain stands up well it is becoming the practice to leave stubble as long as possible. Where the grain is beaten down by storms or is crinkled down by attacks of insects it has to be cut closer. Sometimes where grain has been injured by the winter, then spring sown clover will get high enough to interfere with low cutting, though little is lost by cutting off a few of its highest leaves. Such clover if not pastured down should be out before getting into blossom. That, of course, will take the grain stubble that has been left. In the second cutting, therefore, it is best not to cut low, saving some of the leaves to protect the crown of the clover plant, and some of the stubble to hold snow in winter. Where there is no clover and the stubble is to be plowed for winter grain, the less stubble left the more easily can a good seed bed be made. If the stubble can be got dry enough to burn readily, it is worth much more burned than it is to be plowed under to lie without rotting at the bottom of the furrow."

Root Cellars.

Root cellars vary much in their construction, according to their intended purpose. Smaller ones, intended only for garden vegetables, occupy a portion of the basement under a dwelling, thoroughly separated from the rest of the basement, and requiring care to prevent any odors from them from ascending to the apartments above. Such roots as the tubers of potatoes impart little or none of such odors. More spacious cellars, for receiving large quantities of farm crops, may be placed under barns or carriage houses, but require still greater care to prevent the improper discharge of effluvia, which is to be avoided by always keeping the root cellar cool and providing sufficient ventilation and preventing the roots from heating. Such roots as turnips and rutabagas require special care in this respect, and when masses of them are stored, it should be with a grated wooden floor and sides, to allow the free passage of air to keep them cool and to convey away all odors. If such odors are allowed to accumulate and become strong, they cause the decay of the timbers with which they come in contact. Potatoes should have an apartment which does not freeze; but rutabagas may be several degrees colder. Free ventilation should always be effected by sliding windows, and the temperature controlled at all times by the aid of thermometers.—Country Gentleman.

There is to be a fruit canning exhibit at the World's fair. This will be under the auspices of the National Canned Goods Packers' association.

Meteor, the new hybrid tea rose, has the dark crimson color of the Jacqueminot. The flower is fragrant and promises to become popular.

"The Douglass spruce is the great timber tree of the Rockies and the Sierras. In the east it will thrive anywhere," says a member of the Association of American Nurserymen.

Charles A. Greene, Rochester, N. Y., is secretary of the American Association of Nurserymen.

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THE STANDARD AMERICAN POULTRY BOOK. An entirely new book, involving all the latest ideas in poultry keeping. It is a work intended to teach the masses of farmers the secret of success in the poultry yard, and its teachings, if followed, will add enormously to the earnings of every flock of fowls. The following are only a small portion of the topics treated in this book: How to Start and Stock a Hennery; Poultry Houses, Cheap and Expensive Yards, Coops and Enclosures; Poultry Keeping for Profit; Poultry on a Large Scale; Poultry Raising as a Business; Feeding and Laying; Winter Egg-Production; The Hatching Period; Preparing Nests for Sitters; Spring Breeding of Poultry; the Hens for Farmers; How to Produce Layers; Good and Cheap Incubators; How to Raise Artificially Hatched Chickens; Caponizing; Packing Eggs for Market; Packing Poultry for Market; Feeding Hoppers; Drinking Fountains and Grain Chests; Eggs and Pullets; Preserving Eggs; Diseases of Poultry—Chicken Cholera, Pip, Gapes, Roup, Scaly Legs, Lice, Egg Eating, Crop Bound Fowls, etc.; the Plymouth Rocks; the Wyandottes; the Brown Leghorns; the Golden Spangled Crested Polish; the White Crested Black Polands; the Langshans; the Silver Spangled Hamburghs; the Houdans; the Buff Cochins; the White Cochins; the White Leghorns; the Golden Pencilled Hamburghs; White Shanghais; the La Fleche Fowls; the Gray Dorkings; the Brahmas; Game Fowls, Bantams, etc.; How to Fail; Management of Chickens; Killing Poultry; Preparing against Vermin; Fencing; Management of Ducks; Raising Turkeys, Fattening Geese; etc., etc. It is a large book of 128 pages, 12mo, with handsome cover. It is profusely illustrated and handsomely gotten up in every respect. No man or woman who owns an acre or more of land can afford to be without it.

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FRUIT AND FLOWERS

EFFECT OF WIND ON TREES.

The Repressive Effects of Cold Wind Upon Tree Growth.

Trees which grow in exposed situations have their tops always leaning away in the opposite direction from the prevailing winds, and the casual observer concludes that the branches have been bent by the constant pressure of the wind and retained their position. Now, although such trees have the appearance exactly of trees bending under a gale, still it is not pressure in that way which has given them their shape. The fact is, they have grown away from the blast and not been bent by it after they grew. Examination of the branches and twigs will show this. We hardly realize the repressive effects of cold wind upon tree growth, which it partially or altogether arrests, according to its prevalence.

Conifers show the effects of this more distinctly than other trees. Owing to the horizontal habit of growth of the branches they point directly in the teeth of the gale from whatever direction it comes, and cannot, like the oak, lean over and grow in the opposite direction; hence coniferous trees growing in exposed situations produce good long branches on their lee side, while on the windy side the branches retain their rigid horizontal position, but make comparatively little growth, which is simply suppressed. One instance in substantiation of the foregoing was a Nordmann's spruce, growing in a position fully exposed to the north and south. One branch on the north side of the tree had fifteen annual nodes or growths and was seven feet long, and its opposite had the same number of nodes, being of the same age, but was nearly 2½ feet longer, or 9½ feet, and all the lateral branches were proportionally long and well furnished.

If such a difference as that recorded above is found between the branches of a single tree standing alone in the open, of how much more importance is shelter to all kinds of tender trees and shrubs. When damage is done to trees by frost it is done suddenly, and we see the effects and are struck by them, but except in the case of subjects killed outright or greatly damaged, it is probable that injury to trees from frost is almost nil compared to that worked by cold winds. These considerations should influence every one who contemplates planting, whether it be woods or single trees, but in either case it cannot be doubted that the more dense and loftier the inclosure, whether by means of belts or trees or hedges, that protects plantations of any kind from cold winds, and the hardier the subjects used for cold positions, the better.

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Separate the layers from the others. You cannot keep old hens, pullets, fat hens and lean hens together any more than you can keep dry cows, heifers not yet in milk and fresh cows together, for they do not require the same food.

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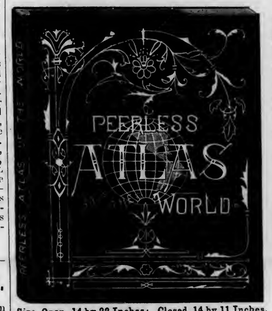

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FARM · FIELD AND GARDEN

Artificial Incubators.

Amateurs are puzzled when it comes to the selection of an incubator, and it is with a view to assisting this class of readers that these remarks from the book entitled "Profits in Poultry" are here given:

The supposition that a constant stream of pure air must flow through an incubator is an error. Not that there should not be plenty of pure air, but it should not pass through as a current. The hen on the nest airs the eggs, but she keeps the air still and motionless. The desire to regulate an incubator has caused incubators to be constructed that open and shut off the heat very easily; but an observer may notice that they will often open and close the valves every few minutes, thus causing the heat to change as many times, and to allow of slow or fast currents according to the frequency with which the valves open and shut.

The best machines are those that slowly reach a point above or below the normal hatching point. Too much air passes into the incubators and not enough into the brooders, as a rule. A little chick does not require so large a volume of air as is usually allowed, and a hundred of them together will not consume so much as a small quadruped. If the air is admitted below the eggs there will always enough escape to allow fresh air to enter for ventilation. A regulator ought to be a very simple arrangement. Some of them are so delicate in construction as to do more injury than good. The majority of persons put too much faith in the regulator. To be successful the operator must determine that he will do the work himself, and he must watch the incubator whether it regulates or not.

In Hammonton many of the incubators are simple tanks surrounded by sawdust and without any self regulators at all. These incubators are made by placing the sawdust between an inner and larger box, the tank being in top of the inner box. The tank for a hundred egg incubator is 15 by 30 inches, 7 inches deep. The egg drawer is 15 by 36 inches, 6 inches fitting in the space at the opening when the drawer is shut. This space in the front of the egg drawer is also boxed off and filled with sawdust. The ventilator is 6 inches deep. Four inches of sawdust surround the inner box. The tank is filled with boiling water. The eggs are hatched at 103 degs. The heat is regulated by drawing off a bucket of water night and morning.

Poultry Notes.

Edward B. Thompson, Ament, N. Y., is secretary of the American Plymouth Rock club, which was organized at Charleston, January, 1891.

A. W. Gardiner, Springfield, Mass., is secretary of the American Buff Leghorn club.

Peaches Worthy of Trial.

A Delaware grower of extended experience with peaches names the following as peaches among the newer varieties worthy of trial. He says of the Elberta that, all things considered, it possesses more of the qualities necessary for the make up of the best family market or shipping peach yet introduced. The Globe is a large yellow fruit, with red cheeks, fine quality and shaped differently from all other peaches in having a depression rather than a swollen point at the apex. John Hass is a freestone, good size, fully equal to the Mountain Rose in size and color; tree a good bearer. Peninsula Yellow will doubtless become a standard sort. The Wheatland is one-third larger than Crawford's Late, quality superb, very high colored.

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THE COLUMBIA DAILY CALENDAR.

An old friend in a new dress, and an article that has come to be one of the indispensables of an editor's desk, comes to hand in the Columbia Daily Calendar for 1892. The Calendar is in the form of a pad containing 367 leaves, each 5½x2½ inches; and each slip bears a short paragraph pertaining to cycling or some kindred subject, and at the bottom of each leaf is a blank for memoranda. The stand is an entirely new departure, being made of sheet metal finished in ivory black, and is very compact. This is the seventh issue of this now well-known Calendar, yet all the matter is fresh and new.

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Provide a warm house for your fowls in winter. Keep either pure or a good strong cross of either Plymouth Rock or one of the Asiatic breeds, so as to have good winter layers. Hens that lay in the early winter will set by Christmas. Set all the early clutches of eggs you can, and when the chicks are hatched turn them and the hen in the house above described and they will do well, providing the following rules are observed: For the first week or ten days keep the hen confined in a coop or box so the chicks can run about and hunt in the chaff when they wish; the hen will constantly cover them while kept in the coop if she is well fed. Feed the chicks just out of her reach at least five times per day (if the trouble is taken to feed by lamp at 9 or 10 o'clock at night they will do much better) on corn cake, biscuit, oatmeal and table scraps and they will grow very fast.

After ten days old the hen can be allowed to run about the house with them during the middle part of the day. Water always with lukewarm water in cold weather and keep the coops clean and dry. Boiled vegetables chopped fine and mixed with meal will make the best of feed. After two weeks old never feed any soft or sloppy food; fowls are constructed for eating dry food or seeds, not slops. As soon as they are old enough to hunt, throw wheat and broken corn among the chaff; it helps them to learn to hunt for it. With good care eight or ten broods can be kept in the house together, providing the hens are quiet and accustomed to each other. In this way early chicks can be grown with very little loss and with less expense than a brooder house. Cross hens must be confined or they will kill or hurt chicks not of their brood.

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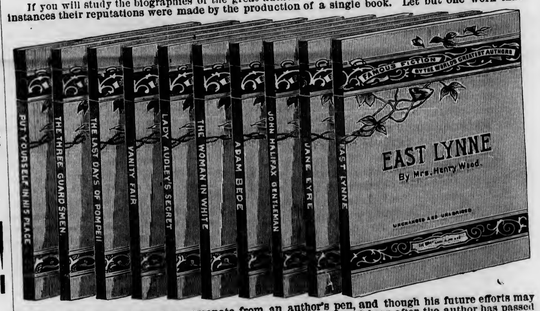

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The value of commercial fertilizers per ton is estimated by the trade value or cost price in the markets of the fertilizing ingredients—nitrogen, phosphoric acid and potash—which it contains, with, of course, a reasonable allowance for the preparation, mixing, bagging, etc. Whether it is worth this amount as an application to land is a question to be decided by actual experiment, depending as it will on the need of the soil for an additional supply of these elements, and furthermore on the profit arising from the increased production caused by its use. Again, all crops are not sufficiently valuable, when produced, to justify a large outlay for fertilizers, whether commercial or domestic, so that maintaining the fertility of the farm in a manner that does not call for an outlay out of proportion to the benefits received is a problem that every farmer must solve for himself.

Neither can any exact figures be given to express the actual value of barnyard manure. The three valuable constituents named exist in it in varying proportions, owing to the kind and conditions of the animals producing it, their food and the proportion and kind of litter with which it may be mixed up. There is also the difference between fresh, partly rotted and thoroughly rotted manure, and its value is further increased or diminished by the manner in which it has been preserved. A very important consideration in the use of manures of this description is their influence on the texture and general character of the soil to which they are applied. While undergoing decomposition they may also aid in changing some of the mineral constituents of the soil into soluble forms.

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All bulbous, tuberous and fibrous rooted herbaceous plants are governed by the same laws, and after potting must be preserved in a cold pit or cellar until needed for forcing. Having such a stock to draw from every fortnight or so, succession of bloom may be kept up in our greenhouses or living rooms all winter long. Roses are especially sensitive regarding strong heat soon after removal from open air; they must be permitted to form roots first.

Planting Potatoes.

In his book "The New Potato Culture," Mr. Carman advises planting the seed pieces in depth according to the soil, whether inclining to clay or sand, from three inches to five inches. The distances of the hills or drills, and the pieces in them, should be regulated by the vigor and size of the varieties planted. Rank growing varieties, the same as tall growing corn, will not yield well if planted too closely together. Experiments with placing the fertilizer under and over the seed pieces give results in favor of the fertilizing over the pieces.

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Nowhere is the rapidly increasing interest in poultry more clearly indicated than at the fairs. At the New York state fair the exhibits in poultry numbered 2,380, or more than twice as many as were entered last year. At the New York and New England fair, held at Albany, the birds exhibited numbered over 3,000. At these and lesser exhibitions not only are fine specimens of the better known breeds shown, but the fanciers are out in full force with the new candidates for favor. These displays give the farmers an admirable chance of comparing the various breeds and noting their respective merits. The American class of fowls, as a rule, appeals to them. Barred Plymouth Rocks are favorites, while the white Plymouth Rocks and white Wyandottes attract admiring attention, as do the gold and silver Wyandottes. Games, bantams and Indian game fowls are well represented and find many admirers.

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Farm & Vineyard

And American Gardener's Assistant.

VOL. 5. NO. 10. ERIE, PA., JANUARY, 1892. FIFTY CENTS A YEAR.

Flowers for Decorative Purposes.

By Helen Wharburden.

For the Farm and Vineyard.

After the flowers are selected for the winter window garden, the next question is the window garden itself, and the uses to which the flowers can be put. In Belgium, the window garden is a most important factor in making the streets appear fresh and attractive. The French and Belgium ladies keep themselves well supplied with fresh flowers at all seasons of the year by means of many unique contrivances, such as turning the balconies into green-houses, and constructing double-glazed windows on the sunny side of the houses. The common Belgium window garden is a simple contrivance, and answers all purposes for rearing winter flowers. It is commonly met with this country, giving satisfaction wherever it is used. The flowers do not occupy any space that may be wanted for other purposes, for the window is placed wholly on the outside. Between the living room and the interior of the window a glass sash is constructed, which keeps out the steam and impure air. Above the sloping roof of glass the sun light can enter into the room through two panes of glass. The lower sashes open by means of a pair of folding leaves, so that the atmosphere can be regulated to suit the needs of the flowers. Almost any mechanic can construct a Belgium window on the outside of a house—it being simply an extension, or bay window put up outside of the ordinary window.—Shelves should be placed on a frame work in the window, in such a way that any pot of flowers can be reached without disturbing the others. When the nights are very cold a pan of cold water can be put in the window without injuring the plant foliage. This should be renewed several times in the early part of the evening, and if necessary the heat from the living room can be allowed to enter. Additional protection may be had by pulling down heavy curtains between the window-panes and the plants, and by stuffing newspapers in the corners and crevices.

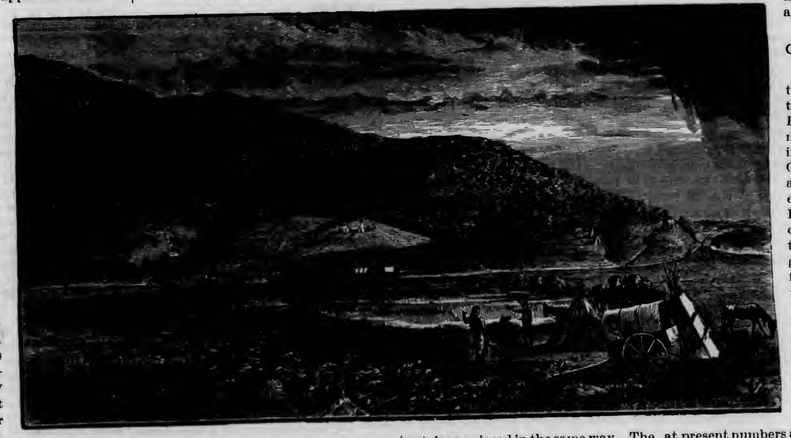
Window gardens do much better in such places where the vitiated atmosphere of the living room cannot reach the plants. The atmosphere in the ordinary living room is so dry that the the plants soon lose their water of vegitation, and, as the moisture around their roots is also absorbed, the plants are unable to suck up enough moisture to sustain their exhausted foilage. This state of things cannot be remedied, for if the living room was put in the proper condition for the plants it would be unbearable for living purposes.

In using the flowers thus grown for decorative purposes the brightness and cheerfulness of the home are greatly increased during the long wintry nights and gloomy days. They can be used to decorate the tables, the walls and the mantle-pieces, and the rooms of the sick. As they cannot be cut so freely with long stems as those taken from the garden in the summer time, it will be necessary to stem them before they can be arranged in wreaths, baskets or bouquets.

To wire the flowers, place one of them face downward, and run a piece of florists' wire through one of the larger petals near its base. Four other petals are pieced in the same way. The end of the wires are then bent backward and twisted around each other until they form a small compact stem. A little damp moss twisted around the wire and close up to the base of the flower will conceal the artificial stem from view. The stem can then be increased to any length by adding splints of wood to the wire.

Only the hardy kinds of flowers can be wired in this way. The Geraniums and other similar delicate ones must be gummed to their artificial stems. The best gum used for this purpose is a solution of bleached shellac in alcohol

If the flowers are to be arranged in basket form they need only short stems. Fill the basket with moss, then stem the flowers as described, and stick the wodden stem into the moss. The moss forms a good back ground, and by keeping it wet the flowers will preserve their beauty longer. Stars, anchors and wreaths are made in similar ways. First make the shape of the design out of moss, winding it together tightly with wire. The whole can then be covered with tin foil or not, just as the taste of the maker dictates. Stick the short flower stems into the moss, and they will stay as long as needed.



Change of Name

There is a strong talk of changing the name of the Erie Chrysanthemum Club, making it The Erie Chrysanthemum and North Western Pennsylvania Horticultural Society. The reason the society didn t get this title when first organized, was because there was an Erie County Horticultural Society then in existence, but this has since fallen through.

The Erie Chrysanthemum Club at present numbers among its 250 members, some of the best families of Erie, and others are daily coming to the front, anxious to assist in the good work so well began. And, with the wider field for work given the society by its new name, with quarterly shows, and meeting for discussion on horticultural subjects, there is no reason why the Erie Chrysanthemum and North Western Pennsylvania Horticultural Society should not rank among the best in the land. We wish the society every success, by whatever name it is known, for its object is a good one.

Subscribe for Farm and Vineyard.

The Gardener's Assistant.

Commercial Fertilizer.

By Thos. D. Baird.

For the Farm and Vineyard.

No better evidence is needed that our farms have lost most of their fertility, than the crops they produce. But the idea of the farmer is how to restore this lost fertility in the best, the quickest and cheapest way.

The manufacturers of fertilizers tell us that it can be done with fertilizers, and it looks like it might be so, as nitrogin, phosphoric acid and potash are the elements mostly lost; but as a rule manufacturers don't know what practical value their fertilizers have. I have made restoring lost fertility, manures and their effects, a study for the last fifteen years, backed by practical tests. And from my experience I cannot think that our land can be restored with artificial fertilizers. Properly managed they may be made an auxiliary, but will not do it alone.

I have applied fertilizers from 40 to 1000 pounds per acre on my garden crops, some crops done well and others did not. I have tried it on corn several years. I have put it at the rate of forty pounds to the acre in the hill, leaving some rows through the middle of the field unfertilized, for a test. When the corn was about two feet high looking fine, these rows unfertilized were not over one foot high and not very thrifty, but by the time the ear was made, these rows were as good as the rest and made as good ears. I have applied fertilizers in various ways on different soils, and only in three instances have I found the result a better ear. Fertilizers, or at least some of them, put on corn stimulates the growth of the plant in a decided manner at first—so much so that we are led to suppose for some time that it would give the largest crop, but at harvest it will be found that it produced little if any more corn. A fertilizer increases the growth of stalk and blades, but has but little effect in increasing the production of grain. I doubt if it will make the yield sufficiently greater to cover its costs.

But using fertilizers not only fails to restore the fertility to the soil, but it has several evil influences. I am convinced that to use fertilizers in raising crops and sell them off the farm, is death to the soil, or even practice raising crops with fertilizers, whether we sell them or not, will finally ruin the soil. Close observation will show that it makes the soil hard and lifeless, at least this is my experience with its use. I cannot see how it can do otherwise, as it imparts no body to the soil, but stimulates the plant so that it draws harder on the elements already in the soil, rendering it poorer and poorer.

I have talked to good farmers here and in other counties and many of them find the same evil effects. Some farmers say, if you will turn under a good crop of clover before using fertilizers, you will find it will not have these evil tendencies. This may all be true, but how are we to get the clover crop to turn under is the question. Land that is able to produce a good crop of clover can be improved with it. But another evil that using fertilizers has, that I wish to notice, is that they cause the farmer to neglect home manure, and to sew less grass and clover, prefering to buy fertilizers, and raise corn, tobacco and other cultivated crops rather than be troubled with the extra stock. Consequently we see fields and fence corners growing up with briars and bushes. Commercial manures may be used with good results on fodder crops, and then turned under or cut and cured and fed to stock, and their manure returned to the fields. From my experience with fertilizers, I would advise when used to use it on crops that make their growth in the early part of the summer, when the soil is more moist and the rain is more frequent.

To restore the fertility to our worn-out farms we must first give up this break down system which we have practised for years, and a building up process must be adopted. This restless and impatient spirit towards mother earth and native soil, must be made subordinate to a calmer and more rational judgment, which will take into consideration all the facts involved in the treatment and cultivation of different soils.

I find the best fertilizer for all crops, and most especially garden crops, is a compost, composed of forest leaves and the richest wood mould and animal manures, composed in alternate layers until well rotted. Where animal manures are a little scarce or hard to get, use two parts leaves and mould to one of animal manures. This compost applied to land make fine crops and steadily improve its fertility. This compost not only put plant food in the soil but gives it a darker color, which warms it and gives it a better mechanical condition, building up and giving a good body to the land.

I have a friend who is running a large farm and garden, whose land is steadily improving, who toid me he had never bought a pound of fertilizer or load of manure. He raises large crops of clover and feeds it to stock, turns under the sod.

It seems to me a better way to improve our crops, than to use commercial fertilizers, is to grow small crops and feed them to stock, save carefully all their manure and return it in the best and most effective way to the soil. If you have more clover than you care to keep stock to feed it to, do not sell it off the farm, but let it stand and fall and rot on the land. The shade will accumulate plant food and the whole plant and root will be worth more to the soil than the hay will bring in cash.

Ever purchaser of our Paint Book gets a year's subscription to Farm and Vineyard.

Growing Grapes in Small Gardens.

Mr. Abner Hollingsworth, writing to *Farm Journal*, very truly says:

It must be a small garden indeed that has not a nook or corner somewhere large enough to grow a Concord grapevine. By a little strategy room may be found to crowd in a Niagara and a Brighton.

Strange as it may seem there are many farmers who have 100 acres of land and not a grapevine growing on the premises, except, perhaps, a few wild vines around the fence or in the swamps.

While it is of course very naughty for farmers' boys to steal fruit, I am not surprised that some of them do so. They have none at home. These same boys would be glad to help grow it, if they had the chance.

There can be no earthly reason why every reader of this paper should not grow the three varieties recommended by Mr. Hollingsworth, when they can be delivered with your mail, together with another new variety, The Wyoming Red, and a years subscription to this paper, for only 50 cents; the regular price of this paper alone.

These four varieties of grapes, we consider the best four grapes in cultivation for all practical purposes; and there is no better time than the present to make preparation.

Choose the location, and have the grapevines mailed as early as the weather will permit of it being done safely; and if when you receive them the ground is frozen, place them in the cellar, and cover the roots with sand or muck. You are then ready to take advantage of the first opportunity offered next spring; and a few years hence, when you are enjoying the luxury of delicious grapes plucked from your own vines, you will wonder why you did not plant those grape vines years ago.

At the same time try and find room to crowd in one or too peach trees. And if your garden is two small for standard trees, try your hand at growing a dwarf pear, or apple tree. For until you have eaten fruit from a tree planted and carefully attended by yourself, you will never know the real enjoyment of eating delicious fruit.

For all fruits the two most essential fertilizing elements are potash and phosphoric acid. Those who have wood ashes have potash in its best form. The next best is muriate of potash. Raw bone meal or steamed bone flour is the best form of phosphoric acid. Bones in any form are good manure for grapes.

If in planting your vines, you can hunt up a bushel basket full of bones and bury them around and under the vines, you will reap the full benefit in after years.

Many times in stirring the soil of a grapevine border, I have been surprised to find how completely the roots have taken possession of a large bone, and how soon that bone can be turned into plant food by the natural action of the chemicals contained in the soil.

Always bear in mind that the grapevine is a gross feeder, and as such should be furnished with a liberal supply of plant food at all times.

We want a bright boy or girl in every township, to take orders for Farm and Vineyard, and our beautiful picture, Christ Before Pilate. The paper a year, and the picture, both for 50 cents. It sells on sight. Some of our boy and girl agents are making from $5 to $20 a month. Write at once for terms.

Subscribe for Farm and Vineyard.

MEADOWS, OLD AND NEW.

The Value of Old Meadows as Compared with Those Newly Seeded.

Farmers are often at a loss to decide whether an old meadow or pasture should be broken up and reseeded or permitted to remain longer in its present condition. Instances are known where rich alluvial lands continuously pastured for a long series of years seemed to have improved rather than to have degenerated. The yield of grass, of course, will vary with the season. Under favorable conditions of moisture the growth will be early and rapid and the crop of herbage large. Where care has been taken to keep out noxious weeds from the beginning, such pastures do not appear to have suffered from want of reseeding.

To practically test the question of the value of old meadows as compared with those newly seeded, experiments running through three years were made by Professor Beal, botanist, at the Michigan station on five and a half acres of rather low, stiff, clay land, which had been continuously pastured for twenty years or more. In 1888 a portion of this field was thoroughly tile drained and plowed, and twelve plats of thirty feet square each were sown with several sorts of clovers and grasses, either pure or mixed, for comparison. Twelve separate square rods of the permanent meadow and the same number of the newly seeded portions were selected for the test. From time to time as any of these plats were in condition for cutting the grass was mowed, weighed at once, then well dried and weighed again.

The results are given in tables too lengthy to be reproduced here. The grasses of the old pasture consisted almost entirely of timothy, June grass and red top. A mixture of eight sorts sown consisted of timothy, tall oat grass, orchard grass, tall fescue, fowl meadow grass, red clover, mammoth clover and wild grass from the west. The first year of the trial the yield of the following named grasses among those recently sown was very light: Meadow foxtail, June grass, fowl meadow grass and red top, while the old pasture was already established and ready to cut an average yield the first year of the trial.

Some of the general conclusions found in the Michigan bulletin are as follows; Alsike clover, some parts of the orchard grass, tall oat grass and perennial rye grass have nearly run out, while red clover may be expected to die the coming winter. The average yield of the natural sod was light when compared with most plats recently seeded. One of the striking points was the large yield of the plats sown with a mixture of eight sorts. If these sorts are properly selected such results of mixtures will almost invariably follow.

Whether to keep arable lands of the farm in permanent pasture or meadow in this state will depend on many circumstances, among which may be mentioned the following, viz., The risk of having the grasses of the old sod injured by insects, by the cold of winter or the droughts of summer, and the cost of seed and labor in breaking up and reseeding every two or three years. As shown by other experimenters, permanent grass lands accumulate a surplus of nitrogen, which is just what is needed for most other crops. The results would doubtless be very different if repeated on other kinds of soil.

Leaks in the shingle roof can be stopped permanently by slipping in strips of tin. They will remain in place without nailing. To nail is to make other leaks. If the tin be oiled or painted with linseed oil and dried before using, its life will be lengthened.

Salt in The Garden.

In spite of the experiments, and long discussions in periodicals, many still doubt the policy of using salt to any extent in the garden. Many plants and gardens have been nearly ruined by applications of this strong agent; but this fact should not influence any one from making trials with salt in the garden. Salt may be used successfully upon nearly all kinds of crops if it is properly applied. It should not be used on cold, wet, or heavy soils, and those who use it in this way will be disappointed in the results, for the tendency is to keep the ground cool and moist. It will do harm rather than good to all such soils. It should not be cast upon very young or tender plants of any kind, for it will be pretty sure to kill them.

Salt is not much of a fertilizer in itself, though plants take it up, as one can tell by tasting and by the stiffening and glazing of straw of a plant grown in a salted ground. It acts upon and assimilates the gross matter in the soil so as to make it available food. It should be in every garden, but not sprinkled carelessly over the plants where it is almost sure to kill most of them. It should be spread over the soil before the seed is put in, and then dragged and worked in. Sow the salt and then work in a layer of manure.

You will do yourself and us a great favor, my friends, if, when writing to advertisers, you say you saw their advertisement in Farm and Vineyard. They always use Farm and Vineyard customers well.

Small Farms.

By Albert H. Rhodes.

For the Farm and Vineyard.

The small farmer labors under quite a disadvantage, especially in raising stock for the market; and in trying to raise gain to sell. These branches of farming are not suitable for small farms. There are several branches though, which can be successfully carried on on the farm of a few acres with equal advantage with the larger territory. A small flock of sheep with plenty of fowls of all varieties, will pay handsomely at present.

The South Downs, if bred carefully, make a first-class variety for a small farm. Breed to a Cotsnold Ram and raise early lambs. Raise turnips and carrots and beets to feed the ewes on in spring, and care for them carefully and they will pay you well.

Your meadow should consist of a great variety of grass, amidst which white clover should be largely mixed. Plenty of water should be given your sheep and not oblige them to eat snow for to quench their thirst.

Twenty ewes would be about right for 50 acres of land, and by selling off yearly your surplus you can keep your flock about the same. Renew them often by keeping your best lambs and selling the old sheep, as an old sheep will run down and die with ordinary care.

Almost all farms have some low places where the ground is springy. Separate out such a place for a small pond for fish and ducks and geese, and for watering stock, as well as to have it convenient in case of fire. Then get the Pekin duck and some geese, and above all else keep 75 or 100 hens. These hens if well cared for will pay you about one dollar apiece for the year.

Your hen house should be on a southern slope and have large glass windows on the south to let in the warm sun. They should have ground bone, and boxes of dust for dusting themselves; plenty of lime; and water clean and pure, and a great variety of feed. Light wheat and broken kernals are excelent for them. Cabbage leaves cut up as for kraut and apples also should be fed them twice or three times a week. Their house should be often cleaned and fumigated with sulphur and then dusted with lime to make sweet. They should have about twice as many nests as are absolutely necessary, as sometimes they get notion'l and want a change. Their nests should be hidden as much as possible fron sight.

The Guinnea hen is a very prolific layer and where eggs are sold by the dozen, will sell as well as any other although a trifle lighter than hens eggs.

The caring for these different varieties of fowl and the rearing of your lambs, with the large garden and the other duties of the farm. will keep an active man busy, and will produce as great a profit in proportion to acres, and perhaps more, as his more fortunate neighbor. Even though you have to rent your farm, you can soon get quite a start in life, if you are industrious and economical; two very necessary things for any farmer to possess in order to be successful.

We will send to any address in the United States the *New York Weekly World* and the Farm & Vineyard, both one whole year for a dollar bill. Now is your time to subscribe.

Some Advantage.

By using commercial fertilizers, the plant food needed, is applied in a more concentrated form. In applying, however, care must be taken not to apply all in a heap. Whether the quantity be large or small, in nearly all cases, better results will be secured by stirring well into the soil. With small garden plants, of course it is not necessary to scatter as far out when applied in the hill, as is necessary with potatoes, cabbage, tomatoes or the larger class of plants.

A good plan in the garden is to scatter broad-cast over the surface, and work into the soil with the rake just before sewing the seed. If of a good quality, commercial fertilizers are generally easily soluble, and the elements of plant food they contain are readily available for use by the plant.

No matter in what condition the manures of fertilizers are applied, if they are of benefit to the growing plants, they must be soluble. One advantage in rotting the manure before applying, is that it is in a much more available condition than if applied fresh. In handling manure there is an advantage in increasing the quantity at the expense of quality, only increasing the cost of hauling out and applying, without a corresponding benefit. While with field crops, as much the best plan is haul the manure direct from the stables or sheds to the fields and applying, without rotting in the garden and truch patch. In a majority of cases, the better plan is to rot thoroughly before applying. Where supply of manure is not sufficient for all crops, in very many cases it will be found a good plan to use commercial fertilizers with the potatoes, and use the animal manures with some other crops. Commercial fertilizers and wood ashes are good for onions, and using these will keep the supply of animal manures for other crops. In managing the manure from the stock, it is always best to use sufficient bedding to keep the stock clean and absorb and retain all of the liquors, as they are fully as valuable as the solids, but it is usualy best to increase the bulk otherwise than this, as dry straw, weeds or stalks; add but little plant food to the soil their effect being largely mechanical. In the fields this may be plowed under to a good advantage, but it is only in exceptional cases that they can be hauled out and scattered over the fields and plowed under to an advantage. Better purchase oil meal and bran and feed out to stock, and convert into manure in this way.

If the Farm and Vineyard is missing any month, write directly to this office and we will promptly forward a duplicate of any copy, to which you are entitled.

Thirty years' dealing with the public is likely to give a man a name, either good or bad. In the case of our old friend, James J. H. Gregory, of Marblehead, the dealings have been so honorable that the name is a synonym of integrity wherever known, and every man, farmer or otherwise, who buys seed of him knows he is getting just what he pays for—rare enough in these days of tricks in trade. Send for his catalogue, which is free to all, and get something that is absolutely reliable.

The *Rural and Poultry World* is a very neat and practical journal, published at 50 cents a year. Anticipating the wants of our readers, we have made arrangements to supply the *Rural and Poultry World* and Farm & Vineyard, both one whole year for 50 cents.

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that can not be cured by taking Hall's Catarrh Cure.

F. J. CHENEY & CO, Props.,
Toledo, O.

We, the undersigned, have known F. J. Cheney for the last five years, and believe him to be perfectly honorable in all business transactions, and financially able to carry out any obligations made by their firm.

West & Truax, wholesale druggists, Toledo, Ohio.

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Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75c per bottle. Sold by all druggists.

Squirrels and Corn.

At the Iowa station great efforts were made in the spring to find out the best way of preventing the squirrels from taking the corn. The corn was treated in the following ways: Smoked with meat in an ordinary smokehouse until the kernels were black; smoked in a barrel with tobacco dust; smoked over night in strong decoction of tobacco and of quassia chips; soaked in a dilute carbolic acid mixture, in strong alum water, in salt water and in kerosene. The squirrels would take the corn treated in any of these ways, though the carbolic acid treatment and the smoking with tobacco made the corn distasteful, and when in the vicinity of other ground would be left till the last. The best remedy seems to be to harrow the ground immediately after planting to cover the planter tracks, and then to scatter corn about the border of the fields and in the vicinity of the squirrel holes as soon as the corn begins to come up.

Killing Fowls Inside a Barrel.

The following occurs in Profits in Poultry, published by the O. Judd company: "Fowls are best slaughtered thus: A barrel is provided with a number of nails driven in around the open edge. A number of loops of twine about six inches long are also provided. The bird is fastened by noosing the loop around the legs and is hung in the barrel head downward. The head is then taken in the left hand and a sharp pointed knife is pushed through the throat close to the vertebræ and down forward so as to cut the throat clear through, by which sensation is at once arrested and the fowl bleeds to death rapidly and painlessly. Being confined in the barrel, the splashing from the fluttering is avoided and everything is done in a clean and easy manner."

Odd Mention.

Are you sure your seed corn is dry? A little moisture may be fatal.

An old bran sack folded up and tacked on the milking stool will add to the milker's comfort.

Corn cobs soaked in coal oil for kindling are made safer, and otherwise improved, by being rolled in fine sawdust.

Tallow smeared over the moldboard will keep it from rusting if the plow is sheltered. Mix a little white lead with the tallow.

Bee Cellars.

At a beekeepers' meeting, where the subject of wintering bees came up for discussion, Dr. Miller, who wants air for his bees, expressed a preference for a large cellar—one that gives sufficient space to place the hives without crowding. In his opinion the depth underground should be about eight feet. The entrance should be on the side where the general prevailing winds would not come. If on a side hill, let the entrance be where you can walk in on the level. It should have double doors.

President Taylor, commenting on Dr. Miller's remarks, said that the sun would penetrate through doors more readily than through the sides of the building, and the door, therefore, should not be where the sun would shine upon it very long. The north or east would be preferable and avoid the sun.

Dr. Mason, who considers that pure air is more needed in early spring than in winter, gave the dimensions of his cellar, which are 14 by 22 feet. In this he has wintered fifty colonies.

Notes.

How can a cow have the "milk and beef form?"

It requires 15,000,000 cows to supply this United States with milk, cheese and butter.

Sulphuring or Bleeching Dried Fruit a Mistake, If not a Crime.

By JOEL W. SMITH, M. D., Charles City, Mo.

For the FARM AND VINEYARD.

The object of this paper should command the careful attention of consumers of dried fruit, of conscientious fruit dealers, and of all health authorities. Fruit is now regarded more as a necessity than as a luxury, the want of it being a common cause of ill health.

As fresh fruit is not always obtainable, various methods of preserving it are in use, drying being one of the oldest and the best for many fruits. Middle-aged people recollect when sun or air drying was the only method for market. Then some good housewife discovered that more rapid drying by artificial heat, with or without the addition of sugar, was a cleaner method, safer against fermentation and decay, retained the flavor better, and the fruit was also lighter colored, than when sun or air dried. The present evaporators are only an enlargement of the idea of such more rapid drying while canning consists in the exclusion of the micro-organic germs of fermentation.

This is the age of progress, yet experience often shows that not all changes are improvements. It is about fifteen years since the sulphuring or bleaching of dried fruit began. At first only the uniform light color was sought, as in apples, pears, etc., but for some years past nearly all the large evaporating establishments have "sulphured" all kinds of fruits and some vegetables, and now much of the California sun-dried fruit for the market is also treated in the same manner. The light color, especially of apples early attracted unthinking consumers and commercial men, thus materially increasing the price of such fruit. That caused the practice to spread even to those who disapproved of it. The expense and trouble were very slight. Fruit so treated is said to dry more readily, consequently all now perfer to do it.

While the apparant change is only in color, t ere is a loss of the natural fruit flavor, even by the most careful sulphuring. Unfortunately, some people do not notice the difference, but careful comparison shows it, as is admitted by the manufacturers of such fruit.

The practice began in California with apricots, as early as 1879. At the Twelfth State Fruit Gorwers' Convention, held is Frisco during four days in November, 1889, a paper on "Fruit Drying" was red by J. L. Mosher, of San Jose, and in his paper he remarked —"If fruit be picked before ripe and over sulphured to produce whiteness, it is devoid of its true rich taste and flavor, and *only requires polishing to make buttons.*" (The italics are his.) In discussing the paper, one gentleman said—"I believe sulphuring the fruit is the greatest mistake in the world. I do it, but I believe it is wrong; the flavor of the fruit is gone after it is sulphured."

This change of quality was the first thing that called the attention of the writer's family to what was lacking in the "nice, uniformly colored" bleached fruits.

Later investigations have proved the presence of sulphate of zinc, "white vitrol," in all samples of fruit where zinc surfaced trays were used to hold the sulphured fruit while drying. Interested parties have charged the German prohibition of American evaporated apples to rival trade opposition, but there is no German fruit to compete with them. The real cause was the finding of zinc poison in considerable quantity. A good paternal government aims to protect its people.

WHY SULPHUR FRUIT AT ALL?

The advocates of sulphuring fruit say,—(1) It dries quicker, (2) looks better, (3) keeps better, and (4) sells better. Besides it makes ripe, unripe and poor fruit all look alike; and if not so good for it, but few know it.

Sulphurous acid is formed by burning sulphur, and is readily absorbed by water. It abstracts oxygen from many vegetable substances, and thereby bleaches them. It also tends to prevent microscopic organizations that cause fermentation. The acid in liquid form is colorless, very cheap, and smells like burning sulphur; is antiseptic, a preservative fluid for some substances —sample fruits, etc. Sulphur is often burned to disinfect sick-rooms of disease germs, and to kill rats, mice and vermin, but its use with food is objectionable. Ants and other insects, it is said, will not touch sulphured fruit, while they will readily attack well ripened fruit that is not sulphured. The instinct of insects and animals is sometimes better than the practice of human beings. In general, substances that rebel such creatures are hardly safe for human food.

THE EFFECT ON CONSUMPTION

has seemed to be a decided falling off in demand among the more intelligent class of people. Retail grocers know that many who once used dried fruit extensively say, "Somehow we have lost our relish for it," and have almost ceased to use it since the craze for sulphuring fruits began. Fruit men say, "The public demands sulphured fruit, will pay more for it, and we will supply it." The public will yet show them that it can get its eyes open. As the green and canned fruit interests are the only permanent gainers by the sulphuring process, they are interested to have it continued.

DIFFICULT TO OBTAIN.

It is not easy to obtain a superior quality of unbleached fruit. In 1886 several retail grocers who understood the question corresponded with parties evaporating apples. The reply was, that "if an order for not less than twenty barrels was received at one time, apples would be furnished unbleached, otherwise not."

SULPHURING NOT DESIRABLE.

The slightly yellowish brown color of unbleached dried fruit is an evidence of ripeness, good quality, and proper drying. The more rapid the drying the lighter will be the color, and the fruit will keep well if at once properly excluded from the air. When sulphured, the good, the poor, and the unripe all look alike. Not so with the unbleached. No poor nor unripe fruit can make good dried fruit. The gain of sulphuring is always with the dealer, and not with the consumer.

HEALTH AGAINST LOOKS.

In preferring looks to quality, the people are often at fault. Public enlightenment will correct most dietetic errors. Good health is now sought by many, and will be by more in the near future, through correct living, rather than by the swallowing of drugs. And in that more excellent way, "in the good time coming," there will be no demand for sulphured and other drugged fruit among intelligent people.

DANGERS.

There is danger from fruit in metal cans, as is well known, and fresh fruit is frequently unobtainable, while both are often more expensive than dried fruits. Good unsophisticated dried fruits are always harmless. If green fruits are at times unobtainable, canned fruits dangerous, and a popular craze has rendered dried fruits so dangerous, what can the suffering public do? It is between the alternatives of using no fruit, or that which is injured or poisonous. Is the sulphuring of fruit a mistake, or a crime?

TO CORRECT THE ERROR,

enlighten the people, and prohibit injurious practices. Legal suasion only will stop it at present. The common schools in many states are required to teach the effects of alcohol and narcotics. Why not also include the effects of different foods?

Grape Vines Free.

No paper ever made such a liberal offer. Four strong grape vines—four of the best varieties in existence—and a year's subscription to this paper for only 50 cents. The Concord is still the best flavored and the most profitable black grape grown. All grape growers who grow grapes for profit grow the Concord. The Niagara is the best white grape, and only a few years ago the vines of this variety sold for a fabulous price. The Brighton is the best flavored grape, later than the Concord and Niagara. Wyoming Red is acknowledged to be the best red grape of recent introduction; a comparatively new variety, but sufficiently tested to give it a place here as one of the best four grapes. Now is the time to stock your garden. For every four subscribers you send us at 25 cents each, you get four vines sent, postage paid. These vines are one-year old No. 1 vines, grown by Geo. A. Josselyn, the well known and reliable nurseryman, of Fredonia, N. Y., and will be packed and sent direct from Mr. Josselyn's establishment at Fredonia.

Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 50 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

New Flowers For 1892.

Excelsior Everblooming Stocks.

The most valuable variety of stock in cultivation, the seed should be sown in February or March, in shallow boxes, and placed in a warm sunny window, or in the greenhouse, and when the plants are large enough to handle, trans plant into other boxes, and as soon as the weather will permit, about May 1st, plant in the open ground about one foot apart, and you will have a grand display of beautiful white sweet scented flowers that will last all summer.

The Giant Collection of Pansies.

Twelve beautiful colors mixed. Everybody is acquainted with these beautiful flowers. Cultivation same as for Stocks.

Imperial French Asters.

Twelve colors mixed. This beautiful strain of Asters must be seen to be appreciated, as it should be. The Aster is very easily grown, and delights in a deep rich soil. For early flowers seed should be sown in the house, or greenhouse, in March or April, same as recommended for Stocks. As the late blossoms are the finest, it is best to sow the seed thinly out of doors early in May, and when the plants are strong enough, transferring them to the beds where they are to flower.

Giant Cockscombs.

This variety is said to be the largest of these free blooming graceful plants, producing immense spikes of beautiful feathery and comb-shaped flowers. They make a splendid pot plant, and are fine for the greenhouse or window garden. Although the plants are best forwarded in a hot bed, showy plants can be raised from seeds planted in the open ground in May.

Moon Flower—Ipomea Grandiflora.

One of the most showy of the annual climbers. Flowers pure white, which are produced abundantly at night and during dull days. The flowers are also very fragra t. These packets of choice seeds would cost 25 cents each at any Seed Store, but if you wish to get them absolutely free, you have only to send (any time previous to March 1st,) 25 cents to pay for a years' subscription to FARM AND VINEYARD, and you take your choice of either of the above packets of choice seeds delivered free with your mail, or we will send 5 papers and 5 packets of seeds for ONE DOLLAR.

REMEMBER this offer is good until March 1 t only. Address

FARM & VINEYARD, Erie, Pa.

THE POULTRY YARD.

The General Purpose Fowl.

Which do you consider the best all around breed of fowls for a farmer to keep? We want eggs, and we want broilers and roasters for our own use and for market. D. E.

While there are several good breeds of so called general purpose fowls, we consider the general purpose fowl like the general purpose cow, a myth. The breed of fowls that produces the most eggs does not make the best table fowl, or perhaps I should say, the most profitable table fowl. As a farmers fowl the White Wyandotte ranks as one of the best. The breed is fairly hardy, they have close rose combs, and so are better able to stand the effects of frost than the single combed varieties. They are of fair average size. Cocks weighing 8½ pounds, hens 6½ pounds. Their clean white plumage adds to their appearance when dressed. They have a large share of flesh compared to the amount of ofal.

As egg producers, and for our own table we find no variety so profitable as the Leghorns. Although all the Leghorn breeds are profitable fowls for the farmer, we give preferance to the Brown Leghorns. They are harder and mature quicker, and lay more eggs than any other breed of fowls I have ever raised. As young chicks they are strong and robust commencing to eat grain and other food in less than two hours after they are hatched, and in two or three days their wing and tail feathers are plainly visible, and at eight weeks you have a good plump chick that will disgrace no table. Although the White Leghorn is quite equal to the brown as an egg producer, we have never met with any success in raising chicks, with us they do not seem so hardy. Some consider the La Flechee a good general purpose fowl, they are moderately hardy, excellent layers, and the chicks grow rapidly: cocks weighing from 8 to 10 pounds, hens 6 and 7 younds.

The Black Minorca is a good egg pro ducer. They are hardy as chicks, and mature early, and although many object to the color of their flesh they make good table fowls; but they are not to be recommended to the farmer for the following reasons: Their large combs and wattles are always liable to get frost bitten; and the objection to the color of their flesh makes them poor market fowls.

Both the Light and Dark Brahmas make good broilers and are moderately good layers.

But the best all around general purpose fowl we ever raised was a cross between the Light D. Brahma and the Plymouth Rock. We had a pen of Light Brahma hens which we mated with a full blooded Plymouth Rock cock, and as a result we had chicks that matured early. The pullets made splendid winter layers, and the cocks made some of the best capons I ever saw. This cross seemed to me at the time to be the nearest approach to the general purpose fowl, and after several years more experience I have no reason to change my mind.

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FARM · FIELD AND GARDEN

OATS AND WHEAT.

Arguments in Favor of Deep Preparation of the Soil for These Crops.

The idea is current with the average farmer that the roots of oats and wheat are superficial, and that it is useless to break the ground deeper than is necessary to plow in the seeds and fertilizers, if any of the latter are applied. This is an erroneous conclusion, as we will endeavor to show, writes a Texas farmer to The Southern Cultivator. He continues: The quantity of roots attached to a plant are far greater than can be observed by merely lifting them from the soil. Shubert made an experiment as follows: An excavation was made in the field to the depth of six feet, and a stream of water was directed against the vertical wall of soil until it was washed away, so that the roots of plants growing in it were laid bare. The roots thus exposed in a field of oats presented the appearance of a mat or felt of white fibers to a depth of four feet below the surface of the ground. The roots of winter wheat he observed as deep as seven feet, in a light subsoil, forty-seven days after sowing.

The quantity of roots in per cent. of the entire plant in the dry state was found to be as follows:

Winter wheat examined last of April.40 per ct.
Winter wheat examined last of May..22 per ct.
Winter rye examined last of April....34 per ct.

The quality of the soil influenced the aggregate yield of roots. In a rich porous garden soil, which is usually deeply broken up, often uniformly spaded and well supplied with vegetable matter, a barley plant produced 128 feet of roots, in a heavier compact subsoil a similar plant yielded only eighty feet of roots. It is evident, therefore, how necessary it is that the plant should have an abundance of room in which to spread out and extend its roots. Incited by a knowledge of these principles, early in December, 1890, I prepared my soil for seeding oats by breaking up as deeply as large heavy mules could pull diamond pointed scooter plows 14 inches long and about 3½ wide, having previously spread broadcast twenty bushels of green cotton seed and 100 pounds of acid phosphate lime per acre. Two bushels of oats per acre were plowed under with a turning plow, commencing Dec. 17. The surface was then dragged over with a heavy brush.

There was a uniformly good stand, and the oats grew without interruption from the start to full maturity. The long dry spell in April and May did not retard its growth, and it attained to a height of from four to five feet, matured full heavy grains with heads sixteen inches long. I did not thrash them out, as I was short of long forage, and fed them after cutting up the entire plant with an oats cutter. Good judges estimated the yield to be forty bushels per acre. This was not phenomenal, but remarkable when compared with the average product of the neighborhood, which did not exceed twelve bushels per acre. One of my neighbors, with more than double the quantity of cotton seed per acre, one-third more of oat seed, and sowed six weeks earlier, made at least one-third less than mine, when the soil was not broken up previously to the sowing of seed.

One characteristic of my oats was the uniform and uninterrupted growth of the plant during the long dry spell of April and May, when the oats of the country in general were atrophied and dwarfed, with almost a failure in the ultimate production. I will remark that my land is characterized by a superficial sandy loam three or four inches deep, supported by a rich tenacious clay substratum from six to eight feet thick, the whole resting upon a bed of limestone. In sandy soils, with no clay within five or ten feet from the surface, it is hardly necessary to remark that subsoiling would be detrimental rather than beneficial, as I have satisfactorily proved.

Pruning in Winter.

Trees of hardy kinds may be safely pruned in winter if but a moderate amount is to be cut away. Heavy pruning renders a tree tender and more liable to injury or check in growth if followed by intense cold, but it rarely happens that such severe pruning is required. If the operator always has a distinct and definite object in view, he need not cut away a single shoot unless needed. A bearing tree may have too thick a head and want a slight thinning, or a small crooked branch may be in the way, requiring only clipping with a pocket knife. There is a special advantage in doing the work now—all the branches and shape of the head may be easily seen while the leaves are off. When the owner of an orchard has to give the business to a hired hand, he may avoid all danger of having the work wrongly done by marking with a piece of chalk the place where he wants the pocket-knife or light saw to do the cutting. Very little cutting need thus be made and no mutilation.

A modification or improvement may be made at any time in winter if the weather happens to be too cold or hands scarce for doing the labor till spring. Take a small brush or pencil, with white paint, pass through the orchard, and wherever a branch is to be pruned mark with the brush a white line where the cut is to be made. Direct the operator to cut nowhere but on this line. The chalk would be washed off by rain; the streak of white paint will remain for months. The piece of chalk may be attached to the end of a rod or pole and be used to reach any part of the tree, and, if desired, the owner may pass through his orchard on horseback and rapidly mark as many trees in an hour as the operator will prune in a day.—Country Gentleman.

A heavy fall of snow may break the limbs of evergreens and other trees. It may be primitive, but there is no better way of dislodging the snow than striking the branches with a pole.

How should cows be stabled to make the most comfortable, and what effect has comfortable quarters and cleanliness on the animals relative to economy of food fed and of results in product?

[illegible] the troughs [illegible]ty at night there will be no ice to chop out in the morning.—Philadelphia Farm Journal.

Wood Ashes as a Fertilizer.

The use of wood ashes as a fertilizer should be more generally understood. Hard wood ashes are much richer in potash than soft wood ashes and are relatively more valuable. Leached wood ashes are hardly worth more than the labor of spreading on the land as a rule, but on a light sandy soil they have a tendency to compact, which is an aid to its physical condition, but it does not act as a manure. Unleached wood ashes is almost a special fertilizer for all fruit crops and only needs the addition of a little nitrogenous manure to make it complete. They should never be mixed with such nitrogenous manure as hen manure and other animal excrements, for they start chemical action in consequence, the nitrogen is thrown off in the form of ammonia and is wasted. Unleached ashes form often a cheap source of potash.

VENTILATION OF POULTRY HOUSES

Leading Authorities Express Themselves on This Much Vexed Question.

The question of ventilation comes up every season and elicits a variety of opinions. We hear from the extremists who demand plenty of fresh air day and night regardless of outdoor temperature; we hear from the extremists, who claim that the fad for fresh air has killed more fowls than it has saved with drafts that are sure accompaniments of ventilation. Then, too, we hear from that small but wise class who attempt to strike the happy medium between drafts and foul air in their endeavors to admit fresh air without creating dangerous drafts. With a view to assisting readers in deciding this question of ventilation we append the expressions of several authorities on the subject. Here is what The Fanciers' Journal says:

"So much depends on the size of the building and its construction that we can say little regarding the best methods of ventilation for buildings in general. We have no ventilators in our buildings. The latter are constructed as follows. The roosting room is 4 by 8 feet; adjoining this is a shed of the same size. The shed is closed at night by muslin screens. The only opening from the roosting room is a small door leading to the shed. This is always open and the fowls are out early in the morning scratching in the shed. The air passing through the muslin screens is sufficient to keep the necessary oxygen on top and the carbolic acid in 'innocuous desuetude.' We keep twelve fowls in such a building, although fifteen Leghorns would do nicely in the same space. The only window is about two feet square, set in the south or southeast side. In the daytime the shed is always open, no matter how cold it is or how hard it rains, unless the rain comes from the south and beats in—a rare occurrence."

A correspondent who tried the non ventilating plan last winter to its fullest extent reports in The Poultry Monthly most favorable results, viz.: "Not a sick fowl during the entire winter, but all bright, healthy and happy, with a fair record as to eggs, to wit: Six hundred and forty-six eggs from eighteen brown Leghorn pullets from Dec. 1 to March 16. The house in which these pullets and one cockerel were kept is 8 by 16 feet, made of matched pine, lined with tarred paper, furred out two inches, and lathed and plastered; ceiled overhead on the rafters with matched ceiling; the lower half of the large south windows closed with tight board shutters, cracks about doors and slide stopped closely; tight board floors covered with stonemasons' sand, and the ventilators closed during the winter, save on three occasions in the middle of warm days.

"From fall to spring the fowls were not let out of doors more than fifteen times, and then only on warm days when there was no snow on the ground and only for a little while at a time, but never to get chilled. The fowls, however, during the day had the run of an inclosed annex 7 by 7 feet, built of boards only, well lighted, with a ground floor plentifully littered with fine hay and lawn clippings, and the slide entrance to which was closed at night, the house proper being so warm that there have been but two mornings when the droppings upon the roost boards were frozen so as to interfere in the least with the regular weekly cleaning."

Wright urges ventilation, and suggests for the ordinary poultry house the plan of having an opening at the highest point of the roof, surmounted by a "lantern" of boards put together in the fashion of venetian blinds.

B. Benjamin, Queens county, N. Y., writes in the New York World: "Drafts are as injurious to poultry as to humans, and as most contrivances for ventilation in our poultry houses create drafts, much harm is done in the northern states through ventilators. In my opinion a uniform warmth with dryness of atmosphere is most conducive to egg laying and other desirable results during the winter season. My houses are made warm with linings of tar paper and I have no special ventilator, but let the fowls out in the middle of the day whenever the sun shines, and at such times I not only ventilate, but thoroughly clean the houses. If the roosts and floors are kept clean there will be no sickness. It is the accumulation of droppings that produces disease. Make the poultry houses warm with tar paper linings and clean them out every day, giving the floor a new layer of fresh earth or sand and you need not worry about ventilators."

Four Varieties of Millet.

Four varieties of millet were tried on the Ontario experiment farm last season. The variety giving the largest yield was China and Indian millet, introduced from the East Indies by Professor Saunders. It is somewhat coarse, and gave a yield of 5½ tons of cured hay per acre. German millet gave the next largest yield, viz., 4¾ tons of cured hay per acre. This variety takes twenty-one days longer to ripen than the common millet, and is also somewhat coarser. Hungarian grass comes next, with four tons per acre. It takes fourteen days longer than the common millet to reach maturity. Common millet was also tested and found to ripen earliest of the four varieties, and also gave the smallest yield, viz., 3¼ tons per acre.

Here and There.

A correspondent of the Santa Barbara Independent writes that bean weevils can be destroyed by sprinkling the beans with benzine or spirits of turpentine. He says that subjection to a dry heat of 150 degs. Fahr. for an hour will also destroy the grubs and not injure the germs of the beans.

Naphthaline has a new use, according to Dr. Rose, who says it is a success in introducing queens and uniting colonies. Simply put a little naphthaline in each hive over night, and the next day there will be no trouble in uniting.

Wheat screenings make good winter food for hens.

We must manure bountifully for a full crop of tomatoes, according to the Maryland experiment station.

The story is going the rounds again about a large snake which was found milking a cow. What was the cow doing while the snake was milking her, and how did the snake reach the cow's udder? Did it stand upon its tail?

A feeding experiment at the Maine agricultural station shows that it costs only eleven dollars a year more to feed a 1,200 pound Holstein cow than to feed a 900 pound Jersey; but this by no means determines the relative value of the two animals. Will the Holstein's carcass dressed for beef sell for eleven dollars more than the Jersey's? And during the year which cow's milk and butter was worth most?

In the province of Ontario a number of creameries have combined into a great syndicate, and the result is improved methods of butter and cheese making. In spite of the opposition to syndicates they seem to be making their way into popular favor in the teeth of all opposition in every line of business. Certainly, when all the creamery men work together and at the same time regard the public as their friend, and not as a common prey to be devoured, it will be far better than when each man's hand is against his neighbor in the same occupation.

THE DAIRY

THE LARGEST CREAMERY.

Seven Hundred Farmers Supply It with Cream Daily.

Probably the largest creamery in the world is that at St. Albans, Vt. The building itself is three stories high, with 9,000 feet of floor room. In the cellar is the boiler, a forty horse power engine, and the tanks for buttermilk. The first floor is the factory proper, in which the cream is received and pumped up to the story above, where are ten tanks holding 600 gallons each, and where are also the testing rooms, offices, etc. It is returned again to the first floor to be churned, worked and packed as butter into tubs. The third story is used as a storage room for tubs, salt and other equipments.

All cream received is tested frequently enough to obtain a thorough knowledge of the amount of butter fat in the average products of the farmer's dairy, and he is credited not only with so many pounds of cream, but also with its butter value. The average of butter fat is less than 4 per cent., but the extremes are 3.25 and 4.75. The milk is not brought to the creamery, but is received at forty-four stations located at various points within twenty-six miles of St. Albans, and there the cream is separated and shipped in special cars to the creamery.

About 700 farmers with 12,000 cows are now supplying the cream for the factory, and the average daily product is 10,000 pounds, but it is gaining patrons each month, and they hope to reach their full capacity of 20,000 pounds daily. They run ten churns, each of which will churn 500 pounds of butter at a time, and four butter workers, upon which eighty pounds can be worked and salted in a very few minutes. It takes a carload of salt every two months, and the business keeps sixty hands employed. The proprietors claim that they have a demand for even more butter than they will be able to make when running to the full capacity, and at prices which are very satisfactory, although they were organized less than a year ago, or in October, 1890, and commenced business in November.—American Cultivator.

Dairying in the United States.

The men employed in the business number 750,000 and the horses are over 1,000,000. Ther are over 12,000,000 horses all told.

The cows and horses annually consume 30,000,000 tons of hay and nearly 90,000.000 bushels of cornmeal, about the same amount of oatmeal, 275,000,000 bushels of oats, 2,000,000 bushel of bran and 30,000,000 bushels of corn, to say nothing of the brewery grains, sprouts and other questionable feed of various kinds that are used to a great extent. It costs $450,000,000 to feed these cows and horses. The average price paid to the laborers necessary in the dairy business is probably twenty dollars a month, amounting to $180,000,000 a year.

The average cow yields about 450 gallons of milk a year, which gives a total product of 6,750,000,000 gallons. Twelve cents a gallon is a fair price to estimate the value of milk at, a total return to the dairy farmers of $810,000,000, if they sold all the milk as milk. But 50 per cent. of their milk is made into cheese and butter. It takes twenty-seven pounds of milk to make one pound of butter, and about ten pounds to make one pound of cheese. There is the same amount of albuminoids in 8¼ pounds of milk as there is in one pound of beef. A fat steer furnishes 50 per cent. of boneless beef, but it would require 24,000,000 steers weighing 1,500 pounds each, to produce the same amount of nutrition as the annual milk product does.—American Analyst.

Growth of the Creamery System.

It is probable that fully one-half pound more butter is recovered from each hundred pounds of milk under the creamery system than can be made by a private dairy as usually managed. Allowing that each cow produced 5,000 pounds of milk per year, which is about the average, there would be an increase of twenty-five pounds of butter for each cow per annum to the credit of the factory system. It is not difficult to believe that this increase is easily absorbed by the market because of the improved quality of the butter. If there is any drop in the price of butter it will not do to ascribe it to the creamery system until we have taken into account the enormous output of the butterine factories.

A careful review of the subject will reveal these two interesting phases: First, the market demands for the most part a high grade product, is willing to pay for it and can absorb an enormous quantity without materially affecting the prices. This enormous demand for good butter has been met by the creamery in a very satisfactory way. In the second place, it is surprising to see the prices stand as well as they do when such a large amount of imitation butter is brought on the market and placed beside the product of private dairies and the enormous output of the creameries.

In thus speaking of private dairies The Gazette does not have in mind the scattered few that turn out that exceptionally fine product that goes direct to consumers. These centers of choice production are legitimate and should be encouraged; they will probably never be supplanted. The average farm butter is the kind that suffers, and between the creameries on the one hand and butterine on the other it is having a hard time of it.

The great lesson in all this is that the average consumer desires good butter and is willing to pay a fair price for it. With the better average product comes a greater consumption, and consequently steadiness of fair prices.—Breeder's Gazette.

What Can Be Done.

Last year Dairy Commissioner Brown, of New York, at a dairy meeting said: "We are keeping on twenty acres seventeen cows, four horses, hogs and chickens. All the fodder we use for that stock we raise on twenty acres. We keep Jersey cows that average 300 pounds of butter a year per cow and get about thirty cents per pound for the butter, or about ninety dollars per cow. After deducting all expenses there was a net profit of fifty-six dollars per head. We are using ensilage, and this is our second year. We make butter at a profit of sixteen cents a pound.

"We feed ensilage summer and winter. I do not know of any other means by which we could keep that number of stock on the land, except with a silo. We feed some grain. The past winter we fed three pounds of hay at noon, twenty pounds night and morning of ensilage, and three pounds of clover hay at night. We fed seven or eight pounds of grain with the ensilage twice a day. We cut our corn for the ensilage, and never put it in whole. We use the southern corn, and find the grain evenly distributed in the ensilage."

From the New York Dairy School.

When is butter overworked and what is the result of overworking?

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Many plants have been saved by this simple means, that would otherwise have been frozen.

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The Lantern in the Barn.

We are indebted to *Farm Journal* for the following:

The cow of a farmer at Adrian, Michigan, kicked over the lantern one morning last week, and the barn and several well-fil·d grainaries were consomed.—*News Item.*

Never take a lantern into the stable. Have a glass window flush with the inside of the wall, and a box outside with a small door and set the lantern in this, letting the light shine through the glass window. That is the way I do.

JOHN.

Show this paper to your neighbor and tell him it costs 25 cents a year. If he don't want to subscribe for a whole year he can have it on trial at the following rates: three months, 10 cents; or, six months, 15 cents. Subscribe now, while the offer is open.

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Popular Talks on Law.

BY WM. C. SPRAGUE, ESQ.

For the FARM AND VINEYARD.

A WOMAN'S CONTRACT OF SURETYSHIP.

At common law, a promissory note of a married woman was void, and so as to her contract as surety. In some of the United States, the common law as to this subject still exists, but by statutes of many of the States, married women are allowed to enter into contracts in respect to their separate estate , subject, generally, to certain restrictions. And in some States the power to enter into contracts of suretyship has been expressly conferred by statute. It would be idle to attempt to give any rule or test by which to determine how far a married woman may bind herself as a guarantor or surety in any State where these enabling acts exhist, They have been so frequently amended, and have so little in common with each other, and are constructed so differently, that the decisions of one State are of little value in others. We shall content ourselves with giving the general law existing in some of the States.

In New York the contract in order to bind a married woman must be made in her separate business, or relating to her separate estate. If not so made, it is void at law, but, perhaps may be enforced in equity, provided that the intention of charging the estate is expressed in the contract, or may be implied from its terms. Under the enabling acts of New York, Maine and Iowa, a married woman may, by a contract expressing the intent to charge her separate estate, bind herself as a surety of the obligation of another, as if she were a single woman.

In North Carolina, Missouri, Alabama, Texas, Indiana, Pennsylvania, Virginia and Tennessee, a wife may become surety for her husband by joining with him in a mortgage on her separate estate to secure his debt. In Alabama (?), Georgia and Pennsylvania (?) she cannot do so. In Georgia she cannot bind her separate estate by any such contract. In Mississippi she may mortgage her separate estate to secure her husband's debts, but the incumbrance reaches only to the rents and profits and does not effect the company (?).

Under the laws in force in Illinios, in 1870, a married woman had no power to become a surety for her husband upon a debt or liability he might incur. In Michigan she can only make such contracts as relate to her own property, and cannot become personally liable except on account of her own matters, nor for another in such an undertaking, joining with her husband merely as his surety.

In Massachusetts and New Jersey she cannot charge her own separate estate by a contract of suretyship, unless in consideration of a benefit to herself on her estate.

In Maine a wife is not liable as surety for her husband on a promissory note.

In Louisiana she may bind her separate estate by an engagement to pay a debt of her husband, and may, with her husband's consent, bind herself as a surety for a third person.

The Indiana statute leaves the wife in the position given her in common law.

In Iowa she may make a valid mortgage to secure the payment of a note made by her husband upon which she is surety, but her general property cannot be applied against her consent to its payment.

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" Amer. Sheep Breeder,	" 1.00	.50	.90
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" N. Y. Weekly World,	" 1.00	.50	1.00
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A Monstrous Wrong.

"Of all the economic evils that filch money from our farmers and retard their prosperity, none is more wide-spread and disastrous than the speculation infutures." This remarkable statement is made by so conservative an authority as the *American Agriculturist* for January. It estimates that the artificial depression in prices, caused by the speculators in fictitious grain and cotton, will rob farmers on their 1891 crops of one cent per pound on cotton and three cents per bushel on oats, wheat ten cents and corn five cents, or a total loss on four crops of $200,000,000. It points out that no other articles, excepting hog products and coal oil, are subject to such manipulation, even Wall street speculation being done on a cash basis for goods actually delivered. The *American Agriculturist*, therefore, indorses the proposition to impose an internal revenue tax of five cents per pound, or twenty cents per bushel on every transaction in fictitious futures, and proposes an active campaign in its behalf. The Washburne-Hatch bill is favored so amended that the law cannot interfere with legitimate contracts for the future delivery of actual goods.

FRUIT AND FLOWERS

GRAPES OLD AND NEW.

Varieties Tested in the Grape Region of Western New York.

There is not, perhaps, another region in the United States where so large a number of kinds succeed so admirably as in the grape region of western New York, and yet of the recently introduced kinds how few there are that are likely to be retained for cultivation! Mr. W.

THE WORDEN GRAPE.

C. Barry reported before the Western New York Horticulture society that, notwithstanding the many recent additions, the old and popular Concord still heads the list and is unequaled for general purposes. The Hartford Prolific, too, has not been displaced by any of the new claimants for popular favor.

Among recent acquisitions the Worden is one of the most important. It is the nearest approach to the Concord, and in some localities will supersede that variety. Barry, one of Rogers' hybrids, is especially valuable as a market grape on account of its size, appearance and good quality. Herbert is of better quality, but not so large or so uniform. Early Victor is not large enough. Moore's Early is a large and showy grape, but not very productive.

The Winchell is the most promising among the new early grapes. Ulster Prolific is a handsome red grape of medium size. The Vergennes is a new grape of good quality and an excellent shipper. Woodruff Red has size, good color, vigor and productiveness, but is poor in quality. The Brighton is of superior quality, but fails in some localities. The Catawba is a superb grape, but it will not ripen everywhere. Iona, a delicious grape, fails for the same reason. Delaware appears to possess every requisite quality except size.

Jefferson is one of the best of the Ricket hybrid grapes. Empire State is one of the most promising of the many kinds yet introduced by Mr. Ricket. Moore's Diamond is considered an important addition among white grapes by those who have grown it. Dutchess is a white grape of fine quality, but can hardly be recommended for market. The Gaertner gains in estimation as a market grape, being handsome and showy.

The Niagara is a very popular white grape, and justly so, for up to the time of its introduction growers were without a really good white market grape. The Pocklington is growing in popularity from year to year, and where it ripens is much esteemed. Moyer, also known as Jordan, is a red grape of recent introduction and is said to possess two essential qualities—earliness and excellent flavor. Esther White and Rockwood Black are two new grapes originated by Mr. Bull, of Concord fame. Both are described as being pure natives, of large size, handsome and of good quality. Among high flavored grapes the Eumelan occupies a foremost place. It is not suitable for market, but the amateur can hardly be without it.

In closing this report of the grapes grown in the locality of Rochester, N. Y., and from which the foregoing is an abstract, Mr. Barry named these six grapes, which have given the best results in the vineyard for market: Lady, Niagara, Barry, Concord, Worden and Gaertner.

Effect of Frost on Plants.

In regard to the ability of plants to bear more frost when their tops are dry than when wet, it may be set down as applying to all those that are hardy as well as the kinds that are tender, that the more moisture there is hanging about them the more they suffer from being confined. Beyond the injury that occurs to plants that are not hardy when their tops get frozen, there is another way in which even hardy plants that have their roots confined to pots or similar appliances suffer if the soil in which they are growing gets frozen. That is through the expansion common to all bodies that absorb water when the water they contain gets frozen and which, in the case of the roots so placed, crushes them to an extent that often causes their destruction, and which would not occur were they in the open ground where the soil is not so confined. Consequently, when any plant, however hardy it may be, has its roots so confined and is within the reach of frost either out of doors or in unheated pits or frames, the pots should be protected in some way or plunged deep enough to keep the soil within them from being frozen.

Horticultural Items.

A new strawberry from New York state bears the name of E. P. Roe, the late horticultural writer and fruit grower.

The Bride gladiolus is readily forced in winter, and is also a good window garden plant. It requires about the same treatment as do hyacinths.

The old flue system of heating greenhouses has given place in many localities to steam and hot water pipes.

Cheapest Feeding Materials.

Linseed cake is the staple food with many farmers. It is not improbable that this article will advance beyond a reasonable price, and the farmer should cast about to see if there is not some food which can be bought so as to pay him better. A good linseed cake is the best food for general purposes, because it contains a fair proportion of the different forms of feeding matter that animals require, and one of its great features is the oil, a substance not strongly represented in grain. An English authority explains that it is only because the feeding constituents are well balanced that it is preferred to other foods, and if other foods are mixed so as to possess the same properties equally good results are obtained. The oil is the chief difficulty, but that may be easily arranged by buying the linseed instead of linseed cake, for then the whole of the oil is obtained. Linseed contains about four times as much oil as linseed cake, so if in making a mixture we bear this point in mind, the most difficult portion of the problem will be solved. Of course the linseed must be crushed or boiled. To supply the albuminoid matter which is found in the cake we have to turn to the pulse crops—beans, peas, lentils, maize and barley.

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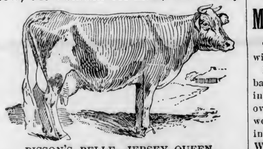

BISSON'S BELLE, JERSEY QUEEN.

for butter and the Ayrshire for cheese. There are exceptions to all records, however, as well as to rules, and in this case the greatest individual butter producer is the Holstein, Pauline Paul.

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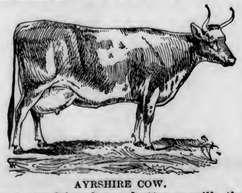

AYRSHIRE COW.

ing a herd for cheese butter or milk the dairyman must consider what family of cattle is best adapted to the soil and climate in his locality; second, what kind of a market he must cater for, that is to say, whether butter, milk or cheese will pay best; and third, the help he will have to hire and the wages to be paid.

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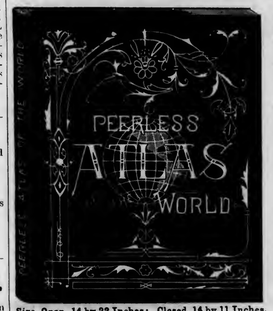

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The popular and electoral votes for president in 1880, 1884 and 1888, by states.
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Gypsum or Land Plaster.

Gypsum is a mineral substance consisting of sulphate of lime and about 21 per cent. of water. It exists in large quantities in Nova Scotia, also in New York and other states. In many parts of the United States it is extensively used for agricultural purposes in its ground condition, when it is called land plaster. Its best effects are on the clovers and liguminous plants, such as peas, beans, etc. On red clover, upon soils where it is not naturally luxuriant, the effect of gypsum is often wonderfully beneficial. Its action as a fertilizer seems to consist more in its absorbing and concentrating ammonia from the atmosphere than from any special fertilizing properties of its own. It is highly recommended as an absorbent to be used in stables and barnyards. Liko lime, it is very useful on certain soils, but its usefulness cannot always be determined without a trial. By using a little on alternate strips of ground a farmer can best decide this question for himself so far as his own soils and crops are concerned. One bushel judiciously used would be enough for this purpose. On some lands no good effects can be seen from its use.

Trying Out Lard.

There need be no difficulty in trying out lard in such a way that it will keep almost indefinitely, provided the two most essential requisites are observed. First, the rendering should be done with a slow and uniform heat, not so slow as to be unnecessarily tedious, but not so fast as to incur any risk from scorching. Second, the heating should be continued until the water contained in the fat has been thoroughly evaporated. This will be pretty well indicated by the scraps becoming crisp and brown, when all such may be taken out and pressed while hot and the liquid lard again returned to the kettle to be still further evaporated. After being sufficiently cooked it should be carefully strained into wooden or stoneware vessels and be set away closely covered to prevent dust from getting into it. If an extra quality is desired the leaf lard should be rendered by itself, but ordinarily the fat pieces and the leaf may be tried together. The fat from the intestines should be tried by itself, and if done in a cleanly manner will make very good lard for all general purposes.

The highest rate of yield of corn for 1891, as estimated by the department of agriculture, was, in New England, from 35 to 40 bushels per acre. In the south the range is from 11 in Florida to 25 in Maryland, while in the surplus corn states the figures are as follows: Ohio, 33.7; Indiana, 32; Illinois, 31.2; Iowa, 36.7; Missouri, 29.9; Kansas, 26.7; Nebraska, 36.3.

When the globules are broken. AD IS salvelike and will not keep well.

What per cent. of water should well made butter contain?

Not over 12 per cent.

What should be the condition of milk vessels to produce the best results in milk, cream and butter?

Clean, sweet and smooth.

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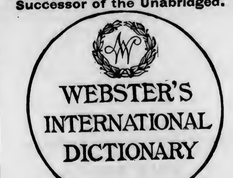

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AMERICA'S WAGON ROADS.

Their Principal Faults and How They May Be Remedied.

It is pretty generally acknowledged that the American wagon roads are the worst that any civilized nation tolerates. There are several principal reasons for this.

First—They were originally laid out without regard for scientific location.

Second—They were built with no foundation but the soil, and the all important subject of drainage received little or no consideration.

Third—They have never been subject to a proper or even reasonably good system of maintenance.

Fourth—Heavy traffic over them is now almost entirely with narrow tired vehicles, which cut the surface of the roads and would doubtless form ruts in a well constructed highway.

These are the four principal reasons why the roads are bad. The results of this melancholy condition are evident to every person who has ever lived in or visited the country in the fall, winter or spring.

Although the statement may seem to be an extravagant one, it is nevertheless true that the "hard times" which the American farmer talks about so much are due more to the bad roads than to any other one cause. This is especially true in the olden states. There are vast tracts of fertile farming lands in all parts of the United States which are practically cut off from communication with the rest of the world during three or four months of the year and for a day or two after every big storm even in the summer. If the farmer has crops to move he can only move them when the "going is good." Bad roads may keep his produce out of the markets for weeks, and in the meantime prices may drop so that the profit on his whole season's work is wiped out. Bad roads double the time and therefore the expense of getting his produce from the farm to the market. Bad roads force him to keep more horses: wear out his wagons, his harnesses and his temper twice as fast as they ought to be worn out. Bad roads rob him and his family of the pleasure of associating with their friends, and change their home into a prison for months at a time. Bad roads make life in the country disagreeable, and drive the best of the young men who are born there, brought up there and needed there to the city.

All this might be easily remedied, and it will be remedied, for it has reached a pass where it must be remedied. The roads have already been improved in some localities, and the good effect has been so marked and so immediate that people of other sections cannot fail to see it and profit by it.

Taking the measures of improvement in the same order that the faults have been named, comes:

First—Location. The idea that the location of a road cannot be changed without revolutionizing the community is a mistake. There is no reason why highways should rigidly follow farm boundaries. The great desideratum in location is the avoidance of grades. It is always easier to go around an elevation than it is to go over it. A pull up a hill half a mile long will tire a team more than a five mile journey over a level road. The Romans recognized the disadvantage of heavy grades when they built their roads, only they didn't bother to go around; they had unlimited resources of labor and funds at their disposal, and cut through the hills and filled up or bridged the valleys. Where it is not advisable to avoid a grade by making a circuit, it is often well to follow the Romans' example and cut through or fill up. The earth taken from the cutting may be used with comparatively little expense in filling up the valleys. If the road is not wholly leveled this way the grade may at least be greatly reduced.

Second—A foundation as solid as possible should be made according to scientific and approved methods. This should be drained thoroughly. The best road consists of a foundation of large stones covered with a surface layer from three to six inches thick of small broken stone. A road built in this way costs money, but will last, if properly cared for, for all time. It is a legacy to posterity—something which every man should wish to leave behind him when he dies. Moreover, it is a fact that many townships could build roads of this kind with less money than is now spent on keeping the old ones in unrepair.

Third—Any road, however good, will be ruined if it is not intelligently repaired. Repairs should be made as soon as the slightest necessity for them appears, for the longer a defect is left to care for itself the greater the rapidity with which it will grow worse. One man at moderate wages can, if he devotes his whole time to it, keep ten miles of broken stone road in constant and perfect repair.

Fourth—No good thing will last if it is not used carefully and intelligently. The custom which prevails nowhere except in America of hauling heavy loads in narrow tired wagons would put ruts in any road. Stringent laws should prevent this. In several European countries this rule has been adopted: Four wheeled wagons drawn by two horses must have tires 2½ inches wide: four wheeled wagons drawn by three or four horses must have tires four inches wide: wagons drawn by five or more horses must have tires six inches wide: two wheeled wagons drawn by two horses must have tires four inches wide: two wheeled wagons drawn by three or more horses must have tires six inches wide. By thus putting greater road surface under heavy loads the lasting quality of the road is increased one-half. Moreover, the two sets of wheels on a four wheeled wagon should not be allowed to "track." That is, the rear wheels should be a few inches farther apart than the front wheels, so that they will not bear upon the same part of the road surface that the front wheels have already strained. Wheels are "cramped" when they turn corners, and do not "track." You never saw a rut where one road turns off from another.

Corning Beef.

The object in salting beef is to get it just salt enough to preserve it, and not so salt as to make it hard and dry when cooked. The following is a receipt much used—Cover the meat for twelve hours with brine scarcely strong enough to float an egg. Then take it out and wash it in cold water, and press it well with the hands and squeeze out all the blood you can before salting it down. Then throw the bloody brine away. Now make a new pickle, and for 100 pounds of beef, or in the same proportions for other quantities, dissolve six pounds of salt, two pounds of sugar and two ounces of saltpeter in water enough to cover the meat when weighted down; skim it well before pouring it on, and whenever scum arises on it afterward, indicating the beginning of fermentation, scald it, skim it and pour it back when cold. Keep in a cool and well ventilated place. For the south and for keeping far into the summer more salt will be required. Never allow the meat to float up and remain uncovered with brine any longer than is necessary while taking out a piece for use.

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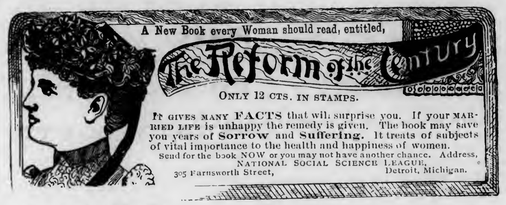

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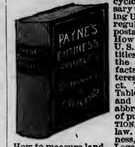

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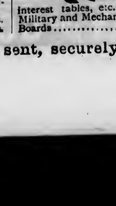

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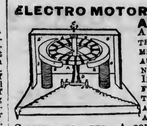

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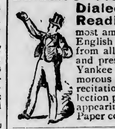

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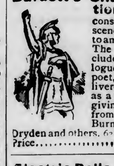

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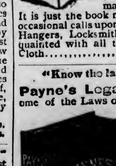

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"What are you fattening these hogs with?" I inquired.

"I give them nothing but whey from the factory," was the reply, "but they have plenty of it."

This would have been a revelation to some farmers, who always have lank, squealing shoats. I do not recommend, however, that pork should be grown exclusively on dairy swill, for the meat is apt to be soft though sweet. Good, clean, rich dairy swill, like buttermilk, sour milk and whey, together with shorts and a little cornmeal, will make a pig develop physically as rapidly as it should, and insure firm, sweet pork.

Many dairy farmers in this state are producing pork for home consumption very cheaply by the judicious use of the waste from their dairies. If the course they pursue could be emulated by all it would produce quite a revolution here in swine growing methods. Half of the dairymen, through the negligence and fault of cheese manufacturers, are furnished regularly with an inferior quality of whey that is worth only half value for hog feeding. Rankly soured whey is an abomination in the pig's trough, for it possesses about as much value for swine food as would potatoes and salt for a human diet. A slight degree of acid in whey is essential to give it good feeding value, but when it is so sour that it will sparkle and foam it is not an economical diet to give to swine.

I think that it would behoove every dairyman to estimate as nearly as possible this fall the actual cost of the pork that he has raised. To compare this result with the market value of the meat would cause the producer to do some interesting thinking. Farmers who make milk production a specialty, and who patronize cheese factories, should insist on having a good quality of whey furnished them. Manufacturers should provide better tanks for storing whey, and the whey should be daily sterilized in hot weather to keep it passably sweet. A steam pipe from the boiler could sterilize the whey in a cheap and effective manner.

I can point to as fine calves as were ever grown that were raised the past summer on whey, with the small addition of a mixture of shorts and middlings. White whey denotes that your cheese maker is not getting out of the milk all of the casein and butter fat that he should, and however much your pigs and calves may thrive on the diet, it is too expensive to be long tolerated.—George E. Newell in American Cultivator.

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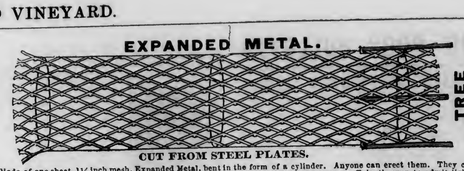

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A POTATO TALK.

A Report on Varieties Tested with Practical Hints on the Culture.

A Pennsylvania farmer writing to The Rural New Yorker said: "I planted a considerable assortment of the leading varieties of potatoes and have tested them, side by side, in the same field. This field was cultivated alike all over. It was manured but lightly and a heavy clover sod was turned down in the spring. The Rural No. 2 did remarkably well. Mammoth Pearl, Blue Victor and Beauty of Hebron all yielded to my entire satisfaction. Mammoth Pearl and Blue Victor rotted more than any other variety I had planted. I found that some potatoes are more liable than others to rot and to be attacked by bugs. I procured a bushel of new yellow fleshed potatoes, which originated along the Blue mountains, in this state, and planted single eyes, almost every one of which sprouted, and to my astonishment the crop was almost entirely free from bugs, blight and rot. The variety is a very rank grower. The stalks are stiff and stout, somewhat resembling those of the Rural No. 2. The color and flower are the same.

"A heavy clover sod turned down in the fall or sometimes in spring (according to the wetness or dryness of the season) and constant cultivation during the summer are some of the necessary helps in potato cultivation. For seed I pick out large, round, smooth, scabless tubers with shallow eyes. Scripture says, 'Whatsoever a man soweth that also shall he reap.' This holds good with most kinds of grain, and still more with potatoes, if we substitute 'harvest' for 'reap.' I cut the tubers to one, two and sometimes three eyes, and get very few small ones. The seed end I throw away. Bestow good care and good cultivation on your potato patch, and the crop will not go back on you."

M. Girard, a French experimenter, believes that with good cultivation and suitable manures all soils can be fitted for the cultivation of the potato, but he nevertheless lays considerable stress on the necessity of taking into account the natural fertility. On the preparation of the soil he sums up the question by saying that intensive cultivation of potatoes cannot be followed except by deep cultivation, and he recommends the soil to be worked to a depth of fourteen inches at least. One foot between the plants is given as about the proper distance along the rows. Early planting is important.

A correspondent of the New York World thinks that the potato crop is often unfavorably affected from too close planting, and this is most likely to be the the case on small plots, where from a desire to get all that is possible from a small space the plants are not given enough room. The stems need light rather than shade, and unless the sun can shine in upon the ground between the rows the vines will be long, green and sappy, when they should have a more stocky and firm upright growth. Where they are planted too closely together or in the shade there will be a rank growing mass of vines, with but few tubers and those very small

---

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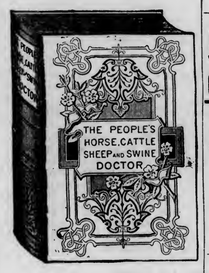

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ESSENTIAL FEATURES OF A BEEHI'

Opinions Expressed by an Apiarist at a Missouri Beekeepers' Convention.

The average apiarist, in speaking of modern progress in beekeeping, is almost sure to place stress on the "hive" as the highest point to be attained in the art of beekeeping. That a certain amount of time and talent should be used in this direction will be agreed to without argument, but to bend every energy in this direction I think is a mistake. When we investigate the subject we find that practical beekeepers are succeeding equally well with the many different makes of hives. This fact alone indicates that good management and adaptability to the business overbalance everything else.

A hive to facilitate labor should be simple, easy to manipulate and of reasonable price. If these points are combined they will be almost sure to produce a popular hive. I use the simplicity hive, improved, nine frames or eight frames and a division board; fill the brood chamber, use one depth section crates with breakjoint honeyboard and section support combined, and follow the tiering up plan for comb honey. For extracted honey use same size brood chambers with perforated zinc queen excluder, and tier up two or three stories high with empty combs, nine combs to the story above the brood chamber.

In taking up the second proposition of my subject, I will be governed by what branch of honey production I want the hive for. If I were working for comb honey exclusively, I would possibly adopt the eight frame hive, but do not think I would. I do not like a small hive, especially for the general beekeeper. They need closer attention, will furnish more destitute colonies in the fall and more and smaller swarms than hives of larger capacity.

If I were running for extracted honey alone I would without hesitation recommend a large hive; the only point of limit would be convenience in handling. But for both comb and extracted honey from the same apiary I have adopted a size of hive suited equally well for both kinds of honey, and of uniform size, viz., the nine frame simplicity single walled hive, with chaff hive for winter and early spring protection. In conclusion I want to be liberal, I want to be found broad in my make up, and I recommend to the beginner and to those who have not got a movable frame hive to secure some reasonably good movable frame hive with crates to hold one pound sections and learn to succeed with it

---

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Fruit Crop of Pennsylvania in 1891.

Following is an extract of a report which was read at the annual meeting of the State Horticultural Association of Pennsylvania in the city of York, on Wednesday, January 20th, by Cyrus T. Fox, Chairman of the General Fruit Committee:

APPLES.

The yield of this fruit was exceedingly large throughout the State. In every county there was an abundance, and prices were the lowest in many years. Thousands of bushels went to waste, on account of the lack of facilities for utilizing the extraordinary crop. In some counties apples sold in the orchards at five cents per bushel, and in the towns and cities they averaged no more than 25 cents during the months of September and October.

PEARS.

There was a fair. average crop of pears generally throughout the State, and the quality was mostly good. There was some blight, but there was less damage from this cause than usual. The Kieffer proved a profitable variety wherever it was grown. This was found to be especially the case in the south-eastern section of the State, where it is a popular kind, and produced a most abundant crop. The Seckel did unusually well. There were a number of poor reports in regard to the Lawrence. The Reading, a favorite winter variety in Berks county which does not appear to succeed anywhere else, bore immoderately and the specimens were not of full size. All summer varieties produced largely. The same can be said of most fall varieties, but owing to the wet summer and hot weather at picking time they had to be sold quickly, when prices were low. Most winter pears proved poor keepers and the bulk of the crop had to be marketed before the holidays. Choice Bartlett pears sold as low as 5 to 8 cents per half peck, and other varieties were correspondingly cheap.

GRAPES.

Grapes did not come up to expectations, and many growers were disappointed. In some sections of the State a frost in May killed the blossom buds, and there was less than half a crop. The wet summer caused considerable trouble from mildew and black rot. Where bagging, however, was tried, good fruit was obtained, and, in fact, in such a summer as that of 1891, this seems to be the only way in which a crop of grapes can be obtained. Spraying also proved quite effective, and some growers saved from 50 to 75 per cent. of their crops by applying the Bordeaux mixture. The Concord still holds its own as a great favorite, but some newer varieties are forging to the front and growing greatly in popularity, among which may be mentioned the Worden and Moore's Early.

The Niagara succeeds admirably in many neighborhoods. Other varieties that made a good reputation last year are Elvira, Salem, Agawam, Pocklington, August Giant, Woodruff Red and Wyoming Red. The Empire State is apparently out of its latitude when planted in the Keystone State, as its results thus far have been unsatisfactory.

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The Musk Plant in the Garden.

Not nearly so freely is this odoriferous old favorite plant employed in the garden as it ought to be. For the least possible amount of labor is needed in its cultivation. For the sides of walks in partial shade, and especially in moist places, it is admirably adapted as a carpet plant, and it will fill the air with its refreshing perfume. It is one of the most popular of pot plants and is equally at home in the cottage and conservatory. But neither gardeners or amateurs have as yet recognized its value as a border plant, or musk beds would be oftener seen than at present. In light dry soils and in hot situations, however, it does not florish, but in strong and moist soils and in shady spots it luxuriates. Plant it in some damp nook where scarcely anything else will grow and it will grow with a vigor that cannot be equalled by plants grown under glass. And how easily it is raised! A thousand plants can be had from a 10 cent packet of seed with a little care in sowing the seed.

The seed may be sown now and strong plants will be had by May 1. The seed is very small and requires a little careful treatment. The soil must be rich and very fine and be thoroughly soaked before the seed is sown. Sow thinly, and lightly dust over it pure sand. Shade the pot or pan in which the seed is sown and place it in a saucer of water, so that the soil is kept regularly moist without applying water to the surface. When the seedlings are large enough to handle, transplant them an inch apart in other pots or boxes, using rich soil, watering them copiously when established and growing, but until then somewhat moderately; yet they must never be dry. Gradually harden the plants off, and plant them out of doors in May. It is only a question of room and boxes as to how many plants are raised, for few plants will grow more freely and satisfactorily. If at any time they show signs of becoming drawn pinch out the tops. A partly spent hot-bed after March is the best place for the plants, the atmosphere of a house being frequently too dry.

New Varieties of Grapes.

J. Hibberd Bartram, of Chester, reports in regard to grapes, as follows: "I cannot say much for the newer varieties, though I have some thirty varieties planted. I thought three years ago that the Brighton was going to do, but now I believe not. Pocklington did well; also Moore's Early and Worden, but I got the most from the Concords. Under glass I lost nearly all my Gros Coleman with rot. Black Hamburg, Royal Ascott and Black Prince did well."

Potting Camellias.

It may be done directly after the flowering period, or before fresh growth is made, and any pruning required should be done at the same time. If the pruning required be anyway severe the plant will need to be placed in moist heat to insure their breaking freely. The potting may also be performed in late August or early September, the buds then being well formed. We usually prefer the latter time for potting, providing the roots are in a healthy state, but if much removal of soil is necessary and the roots in a bad state, spring potting is preferable, encouraging root action by a brisk moist heat.

INV. 60

STANFORD'S LAND LOAN SCHEME.

To give our readers a proper conception of the land loan bill, we give the following interview which appeared in the Cincinnati Enquirer:

"Senator Stanford has returned to Washington, charged with enthusiasm over his land-loan project. The scheme is not taken very seriously by many of his Senatorial colleagues, and there is a general impression abroad that Mr. Stanford is not in earnest about it himself, but employs it as a means of capturing the favor of the honest agriculturist. This is a mistake. Senator Stanford is thoroughly sincere in the belief that he has found the panacea for all existing industrial ills. He does not regard his measure as one primarily one for the benefit of the farmers, but as for the promotion of general prosperity. The land loans are not the ends, but the means. They are the machinery for putting more paper money into circulation. It is the money that he regards as the important thing.

I called on the Senator to-night so know definitely what his ideas were. 'To make a fair start,' said I, 'suppose you tell me at the outset just what your plan is.'

'It is very simple,' responded Mr. Stanford. 'My bill provides that the Government shall lend money on good land security to an amount never more than one half the assessed value. It need not reach one half, however. If the Government officials should not deem the security perfect, they are obliged to take the assessment as conclusive evidence. The great object on my part is to furnish such an amount of money as shall supply the real wants of the country.'

'Do you propose to confine yourself to loans on farming lands?'

'For the present, yes, because the security is ample for the issue of all the money now needed to supply the wants of society. The principle, of course, is to furnish money based upon perfect security, and it would be as applicable to one kind of security as to another; but this is an experiment, and I propose that we shall go with great caution and take no chances.'

THE SUB-TREASURY PLAN COMPARED.

'What is the distinction between your plan and the Sub-Treasury scheme of the Farmers' Alliance?'

'The Sub-Treasury plan is loaning money, of necessity temporarily, to the farmer on the products of the farm. The farmer has to pay back to the Government as soon as his crops are sold whatever the Government may advance, and therefore the system would fail to furnish additional money for general circulation.'

'Have you estimated the amount of money that you would be likely to require to carry out your plan?'

'Not with accuracy. As long as money could earn more than 2 per cent. it would be borrowed from the Government. Whenever it fell below 2 per cent. the farmer would borrow the cheaper money and pay off his indebtedness to the Government. Under this system the supply of money would be automatically regulated. Whatever the individual could profitably use he would be able to obtain. The power of the Government being unlimited and the security practically inexhaustible, the public needs would be the only limit to the volume of currency.'

'What provisions do you make to insure the payment of these loans?'

'A mortgage on real estate.'

'Would you expect the mortgages to be foreclosed?'

'In case the parties did not pay up, but this would not be likely to occur, because the rate of interest would be so light. The probability is that all the interest would be very readily paid.'

'Would you expect this money to become the sole circulating medium, superseding gold and silver?'

'Very nearly. Of course, this money is to be taken for all debts, public and private. That insures its universal acceptance. The value of money depends entirely upon its legal tender quality and does not depend upon the material. Now, today the standard is gold. Our Government does not say that the value of a dollar shall be so many grains of gold, but it provides that in a gold dollar so many grains of gold shall be put and that practically gives you the same standard of value.'

'What security do you provide against the fraudulent overvaluation of land?'

'The loans would be made on the assessed valuation prior to the application for the loan. Then, in addition to that, the Government officers would have the power to determine whether the property was assessed too high. The assessment is not to be conclusive, except that in no case shall the Government lend more than one-half of the assessed value.'

'You spoke recently about energizing a large portion of the wealth of the country?'

'Yes, this is an important consideration. The value of property is in its forces. To illustrate: A man owns $100,000 in Government bonds; they are worth to him $4,000 a year in interest, and the public is not benefitted at all by their existence. The man takes them to the Government and receives $90,000 in notes and puts that money into circulation. The moment he does that, 90 per cent. of those bonds have become energized and may become an active force in the affairs of men. That $90,000 put in circulation may give employment to a great deal of labor, stimulate the energies of people and make another $100,000 during the year. So when a farmer borrows $2,500 on his $5,000 farm he has got one-half of the value of his farm into an energetic condition. The latent energies are developed. He spends that $2,500 of his money in making improvements on his farm, and thereby adds so much wealth to the country, while the money has been put in circulation and goes on to stimulate public enterprise. Money is a tool in a large sense, and when people can get an ample supply enterprise will be prosecuted, labor will be in demand, and the consequence will be that there will be no idlers in the country except from choice. Now the tremendous effect of drawing out the latent energy of property has not been fully realized. If an advance could be made to the farmer without any interest, the increase in the value of his farm would be the full amount of the money borrowed upon it, but in its effects far greater than that, because money is valuable only when in use, and the oftener it is used the better will be the returns.'

ENHANCEMENT OF PRICES.

'Would not this large increase of money enhance prices in this country?'

'In some things no doubt it would. For instance it would enhance the value of the farms, because a farm would give a man valuable credit.'

'What effect would it have on our foreign trade?'

'I think, with the great stimulus to business and to production, we would have a great deal more to sell abroad than we have now, and of course that would increase the balance of exchange in our favor.'

'Do you think your plan would raise the wages of labor?'

'Yes, it would increase the demand for labor, because it would give the people the means of employing labor. There is scarcely any enterprising man who does not say that he could do this or that if he only had the means. My system would provide the means for the prosecution of every enterprise that offered a fair reward.'

'Would it make it easier for workmen to become their own employers through co-operation?'

'I think it would be a very decided advantage to co-operative societies if they could get the money necessary to carry on their business. I am strongly in favor of co-operation. The great thing is to furnish men with means to prosecute their various callings. I think my plan would provide them with money according to their deservings, and that means general prosperity.'

'Your idea, I suppose, is to have the money paid out again as fast as it returns to the Treasury?'

'If any body should want it and give the proper mortgage. I think the demand for this money would be so great in a short time that the 2 per cent. interest would pay all of the current expenses of the Government. The declaration that the standard of value of a dollar shall be so many grains of gold makes every dollar equal in value as much so as if all dollars had to contain so many grains of silver and gold. This disposes of the question of bimetallism, monometallism and all the difficulties of parify in the value of metals. With such a standard all dollars would be of one value, as they ought to be. There would be no difficulty in maintaining an almost uniform standard of value, because should the standard of gold depreciate or increase in value, the value of money could be regulated by taking from or adding to the number of grains. The business of the bankers will flourish whenever there is general prosperity. Money is valuable only in activity. A ten-dollar bill in your pocket does you no good until you use it.

'A man borrows $100 at 6 per cent. interest. He hires 100 men and pays them one dollar each a day. At night he converts the product of their labor into cash; he again hires them for the next day, and so on for every working day in the year. Thus for the use of $100 a day and the power of employing 100 men he pays only $5 a year. The secret of his success is that he keeps his money moving. Idle money accomplishes no more than an ax lying at the foot of a tree unused.'

'Has any such plan as yours ever been tried?'

'No, not precisely, where there was specified security for the loan. In Venice for 600 years they issued paper money, but they never redeemed it with other money. That little island of 150,000 inhabitants became the mistress of the Mediterranean.

'The wealth of this country is increasing at the rate of $150,000,000 per month. That should be sufficient to prevent the universal distress we have seen. It could prevent it if the wealth could be utilized and directed to the points at which it is needed. That is what my plan would do. It would convert the latent force of property into circulating capital and make it impossible for any productive enterprise to fail for lack of the tools to carry it on."

These reflections of the Senator are worthy of consideration and the deepest thought.

If the FARM AND VINEYARD is missing any month, write directly to this office and we will promptly forward a duplicate of any copy, to which you are entitled.

Spraying, Again

While on the subject of spraying it may be stated that an attempt was made during the grape season to inaugurate a "boycott" in the city of New York against grapes produced upon vines which had been treated with the Bordeaux mixture. Some cases of alleged poisoning were reported, and many valuable shipments of grapes were seized. On account of the prejudice thus aroused the grape growers of the Hudson valley lost heavily. Now it has been demonstrated by the best chemists in the land that the Bordeaux mixture, as prepared, can do no possible harm, and it is applied at such an early stage in the growth of the fruit that it will be impossible for the fruit to retain any poisonous qualities.

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THE RAISIN GRAPE IN NEW MEXICO.

BY W. S. BURKE, ALBUQUERQUE, N. M.

For the FARM AND VINEYARD.

Experiments conducted upon a large scale, and in several different sections of the Rio Grande valley in New Mexico, during the last eight years have demonstrated beyond question that this part of the country possesses superior advantage for producing and curing the raisin grape, and this industry is now beginning to receive a very considerable degree of attention, since the cultivation of the raisin grape in countries adapted to it, is well known to be one of the most profitable lines in which the time and soil of the cultivator can be employed. This business has been carried on extensively in California for many years past, and the raisins of that State now stands high in the markets of the country, but the time is coming when New Mexico will out-rank the Golden State as a raisin country, for the reason that during the curing season those sections of California in which such grapes are produced, are subject to occasional fogs and rains, which interfere quite seriously with the drying process and cause a good deal of trouble and extra labor, while in the raisin grape districts of New Mexico we can always rely upon uninterrupted bright, warm weather at that season of the year. There is less rainfall here than at any other point on the continent and a larger proportion of cloudless days. This would not speak well for the country, in an agricultural sense, were it not for the fact that we do all our farming by irrigation, and do not depend upon rain at all, and that being the case we regard every cloudy day as simply serving to detract so much from the flavor of the fruit—for as every fruit grower, in any part of the world knows, the fruit always has a better flavor in a bright season than in a cloudy one. Hence, as there are more bright days here during the season than in any other section of the country, the fruits raised here must inevitably be of a superior quality.

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Popular Talks on Law.

BY WM. C. SPRAGUE, ESQ.

For the FARM AND VINEYARD.

BAGGAGE.

A common carrier, by contracting to carry a passenger, thereby agrees to carry the passenger's baggage. As to the amount and character of the baggage it has thus assumed to carry, the common law has attempted to define only in general terms. As a general statement, the carrier may be said to have contracted to take whatever a passenger may require for his personal use or convenience, according to the habits or wants of the particular class to which he belongs, either with reference to the immediate necessities or to the ultimate purpose of the journey. The quantity and quality may be such as the station of the party, the object and length of the journey, and other circumstances may reasonably require.

As may be conjectured, this apparent latitude in construction of the term "baggage" has led to dispute and litigation.

It has been decided that where the passenger carries more in quantity and value than such as is usually carried by passengers under like circumstances, the carrier is not liable as a common carrier—that is as an insurer—for the excess.

In one case, $10,000 worth of laces, carried by a wealthy Russian, were held to be baggage under the rule, because designed for and used according to her convenience, during an extended journey upon which she had entered.

"Baggage" has been held to include a watch, jewelry, an opera glass, surgical instruments, a gun, a pistol, a mechanic's tools, manuscript, books; but not samples of merchandise, except when the carrier, being made aware of the character of the articles, takes them as baggage, nor gold ornaments for presents, nor money, except as to such limited amount as may be necessary for personal use.

A recent California case held that a man traveling alone, and carrying in his trunk a lot of ladies' jewelry, could not recover damages for their loss, under the common law rule. The California Code requires a common carrier to carry a reasonable amount of luggage for a passenger without charge, and defines "luggage" as consisting in "Any article intended for the use of a passenger while traveling, or for his personal equipment."

It is hard to see how this statutory definition helps us, for there still remains the question of what is "personal equipment?"

A Pennsylvania case held that when a man is traveling with his wife, whose jewelry is in a trunk which is being carried as baggage, he is entitled to recover its value.

The question seems to resolve itself into this—Are the articles such in quantity and value as passengers, under like circumstances, ordinarily carry for personal use when traveling? If the question is answered in the affirmative, the carrier is liable for their loss, as an insurer, if in the negative, he is not so liable.

Shall We Continue to Spray Grape Vines.

H. W. Comfort, of Bucks, says: "I sprayed my apples, pears, plums and cherries, and shall hope to always spray. The fruits keeps better. This year has been the season of plenty. I hope the subject of spraying will be urged before our coming meeting, as the fair apples are made much fairer by spraying and keep much better. Red Astrachan apples sprayed were very fine, and did not rot at the core any sooner than other varieties, while trees not sprayed bore miserable knotty fruit that rotted on the branches. Any fruit grower will soon find himself behind the times who does not use the force pump."

The dairy commissioner of New Jersey says that upon investigation he has found that oleomargarine is almost universally used at the seaside resorts, such as Ocean Grove, Atlantic City and Long Branch. It was served up on the tables of the hotels and in the cottages as pure butter, and was brought in in trunks, hat boxes, wash hampers and the like to escape the eye of the law.

FRUIT AND FLOWERS

NOTES ON WINDOW PLANTS.

Suggestions Made by a New York Florist in Popular Gardening.

One of the best window plants is always the fuchsia. Speciosa, Lord Byron and Beaconsfield are good sorts to select, as is also the old Rose of Castile. Callas, kept all summer dry or at rest, will start with the greatest readiness. Keep them always abundantly watered, and give them strong light. Geraniums, on the contrary, must not be overwatered. On the whole, there is nothing finer for windows in winter than primroses. These like wood earth and sand. A collection of the bouvardia is very pleasing.

The old China roses are fine for winter. Hermosa, Catherine Mermet and Madame Watteville are good; so also the glorious Papa Gontier. Agrippina and Louis Philippe are two fine old sorts that will bloom well in pots. For back seats, away from the full light, you need begonias and ivies, the latter to twine about to cover bare places. One of the very best of all window plants is the Hoya carnosa or wax plant. Plant in strong soil, set up on a high shelf, seldom repot and train it by tying under the ceiling.

The very best bulb for the window is the Freesia, which requires potting in very rich earth. The morning glory and the Tropæolum or nasturtium make easily grown vines and bloom delightfully. Sow the seeds, and they are soon on the climb and in full bloom.

Ammonia in Manure.

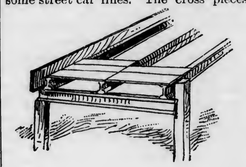
The prevalent idea that manure contains much ammonia is pronounced by an English authority as without foundation. It is explained that the elements of which ammonia is formed during decomposition, viz., nitrogen and hydrogen, are to be found in manure, but as decomposition is a very slow process the ammonia is very slowly evolved. As it is produced it is in the form of gas, which is dissolved in the water existing in the manure, or it combines with the abundant carbonic acid evolved during the decomposition and forms carbonate of ammonia. It is very rare that any ammonia can be detected escaping from a manure heap. The fetid odor of a manure pile is not caused by ammonia, but by compounds of sulphur and carbon, the same as those evolved by decaying eggs and rotten cabbages. The ammonia of manure is very slowly disengaged, requiring a year or more before it is all produced and evolved, and as the soil absorbs it freely there is scarcely any danger of any loss of this valuable part of the manure as it is commonly used. The pungent odor of a horse stable is caused by the escaping of ammonia, and farmers lose more of this element of manure in this way in one warm night from an unclean horse stable than from their manure heaps in a year. A pound of ammonia in manure is worth seventeen cents, and a ton of manure produces in all only twelve pounds of it, according to the authority quoted.

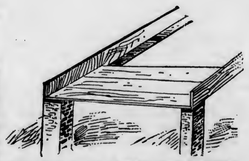
Hot Water Treatment for Smut.

The hot water treatment for smut in oats consists in immersing the seed that is infected with smut for a few minutes in scalding water. The temperature must be such as to kill the smut spores and the immersion must not be so prolonged that the heat will injure the germ of the seed. As practiced and recommended by the Kansas station, the temperature of the water must be allowed to vary but little from 132½ degs., in no case rising higher than 135 degs., nor falling lower than 130 degs. The plan suggested is to provide two kettles over a fire or two boilers on a cook stove, one containing warm water, say 110-130, the other 132½ degs. The first is for the purpose of warming the seed preparatory to dipping it into the second, otherwise it will be difficult to keep the water in the second vessel at a proper temperature. The seed is confined in a wire basket that will allow the hot water to pass in and out readily as the basket is lowered and lifted, which should be done eight or ten times during the immersion, which should be continued fifteen minutes. At the end of that time cold water is dashed over the seed or it is dipped into a vessel of cold water and then spread out to dry. Other portions of the seed are treated in the same way. The temperature of 132½ degs. is maintained by adding hot or cold water as may be required.

Substantial Greenhouse Benches.

We here reproduce from The American Florist two styles of substantial greenhouse benches. In Fig. 1 the rails used were light T rails, such as are used on some street car lines. The cross pieces





TWO STYLES OF GREENHOUSE BENCHES.

are of the same sized rail, only placed right side up, resting on the top of the front cedar post, and mortised into the other cedar post at the back. The three rails that run lengthwise are placed bottom side up, so as to allow a broad flat surface for the slats or other bottom material to rest on. The rails are held in proper position by pieces of board cut so as to fit in the spaces between them. But it is necessary to hold them in place only long enough to get the slates or other bottom material in position.

The cedar posts are sunk eighteen inches in the ground and are placed eight to twelve feet apart. The side board is held in position by galvanized iron strips, which pass through two slits in the board and clasp around the outside rail. These are placed four feet apart. This is the weakest point about this style of bench. The rest is as solid as a rock. For the center benches the same system is followed, the rails being placed at a proper distance apart to suit the size of the slate, etc., used.

The second figure shows a style of bench used by a florist in Minneapolis. Two pieces of large angle iron about 3 by 3 inches run lengthwise of the house on brick piers set down about eight feet apart, and for the bottom short boards are placed crosswise. The illustration is sufficiently plain without further description.

For bloat in cows dash cold water over the animal's back repeatedly. This lowers the cow's temperature and condenses the gases in her stomach, giving them room to escape.

Department of Agriculture.

The Department of Agriculture has now in press Farmers' Bulletin No. 5, which treats in a brief and practical manner of smut, in oats and wheat especially, and of the means which should be adopted by farmers in preparing the seed so as to avoid injury to the crop from this cause. In order to avail themselves of the suggestions therein contained, farmers will want to receive this bulletin without delay, and special urgency will be used to get it out promptly. In the meantime applicants should send in their names and addresses, and the bulletin will be mailed to them immediately on its issue.

Farmers' Bulletin No. 6, also in press, treats of the cultivation and curing of tobacco. It is written by Mr. John M. Estes, a practical tobacco-raiser who has recently made a careful study of the subject in the tobacco-raising States.

In order that seeds may germinate, they must come in direct contact with the soil. So the smaller the seeds the finer the ground must be made before planting. In order that there may be no mistake, suppose that you make all the ground fine—fine as powder, that would be an ideal seed bed.

Nurserymen and men of experience say that the coming season will be a splendid fruit year. They say that the trees at this time of year are unusually full of fruit buds, and if they weather out the storms of the season this year will be a very prosperous and progressive year in fruit industries.

Girdling Grape Vines.—The practice of girdling grape vines to hasten the ripening and increase the size of the fruit is now common among Hudson River valley horticulturists. But one of them says it is risky business to girdle a red grape. The Catawba and Vergennes will not color up and ripen, the Delaware is unestable. He says it should be a misdemeanor to put a girdled Delaware upon the market.

Any person who has no use for any of our premium offers, should write for our liberal cash commission to agents.

Growing Potatoes.

As with all root crops a sandy or light loam worked reasonably deep is the best for this crop, and if it's reasonably rich all the better, although it is not the best to apply coarse fresh manure, as it induces a rough, fringy growth. A clover sod, especially if it has been well plowed in the fall and can be worked into a good tilth. It is very important with potatoes to have the soil worked thorough and deep before planting, as a much better growth and yield can be secured. In many cases where the soil is not as rich as it should be, commercial fertilizers can be used to a good advantage, but when this is the case it is best to secure in time to apply when the seed is planted.

As a general rule the better plan is to plow deep and thorough and then work into a good tilth with the harrow or cultivator; with sod land a disc harrow can nearly always be used to a good advantage in preparing the soil properly. Mark out the rows reasonably deep and especially so if commercial fertilizers are to be applied in the hill. One good plan of applying is to drop a small quantity, a gill is sufficient where each hill is to be planted, stir into the soil with a trowel or rake and then plant the seed on top of this Another good plan is to drop the seed, cover lightly with soil and then apply the fertilizer on top of this and finish the covering with soil. Unless planted very early it is best to cover reasonably deep. Harrow two or three times after planting, the number of times depending upon the condition of the soil. The soil can be kept in a good tilth and the weeds be kept down easier with the harrow than with any other implement if the work is commenced in time, thereby the necessity for hoeing may be largely reduced. It is very important to give clearly thorough cultivation in order to secure the best results and the most economical plan of doing this is to commence as soon as possible after planting. Stirring the surface of the soil frequently, keeping mellow and in a good tilth, will give much the best results With good seed planted in good season with a good soil and thorough cultivation a good crop can readily be grown and in nearly all cases with profit.

We want an active agent at every fair this fall. Write for our terms, it will pay you.

Inarching Vines.

The best time to do this is soon after growth is made, there being a few leaves on both stock and scion to appropriate the sap, and thereby lessen the liabil'ty of bleeding. The speediest union is effected when the growths of the current year are operated on, both stock and scion being soft and unripe. The earlier it is done the greater the certainty of securing a good growth and its thorough ripening.

Good Results From Spraying.

J. W. Pyle, of Chester, says: "Those who sprayed their apple orchards are well pleased with the good results, especially on winter apples. But there are some perfect specimens among the winter apples of those persons who allowed the insects full liberty. We feel certain it would pay some one in every neighborhood to make it a business to go among the farmers and spray their orchards at the proper season for a few cents per tree. We think farmers would have it done this way, but few will go to the expense of buying a pump for the purpose."

Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 50 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

In the Orchard.

The Philadelphia Farm Journal says:

Now is a good time to remove bark lice from the trees. A potash wash, or diluted soft soap, put on with a whitewash brush will do it.

A good orchard ought to and will take care of the interest on the farm mortgage, and the principal, too, if you fertilize and cultivate it well.

Quince trees, like pears, rarely have manure enough. It should be put on thickly three feet from the bodies and dug in, or allowed to kill the grass.

Here are some apples to plant: Porter, Smokehouse, White Carver, Baldwin, Greening, Ben Davis, Smith's Cider and Russet. Of pears, plant Bartlett, Seckel, Anjou and Lawrence.

Germinating Nuts.

The only reason why many persons fail to make such nuts as pecan, hickory, English walnuts and chestnuts germinate when planted is that they allow them to get thoroughly dried before they are placed in the ground, says American Agriculturist. For pecans, shellbark hickory, butternuts, filberts and other hard shell kinds there is no better place to store them during winter than in heaps of sand piled up in some shady spot in the open ground. First place a layer of the nuts, then a layer of sand, then a layer of nuts, and proceed in this way until your stock of nuts is exhausted, and cover the heap with six inches of good soil or sods and leave all undisturbed until spring, then take out the nuts and plant in drills.

If there is danger of mice and squirrels carrying away the nuts place them in well drained boxes, covering with wire netting. Chestnuts may be stored in the same way, but the sand should be clean and the boxes set where the water from melting snows will quickly drain off. Fresh imported English walnuts buried in the fall or any time in the early winter will usually germinate quite freely. Imported filberts are sometimes gathered before quite mature, and for this reason fail to grow, but if the kernels are plump when obtained there is no danger of failure if kept cool and moist during the winter.

Chrysanthemums.

According to Popular Gardening, thorough thinning is of greatest importance. Plants should not be crowded. Plants that are backward should be placed in a very light house and subjected to a little fire heat after a few days' housing. Push them on with a little ammonia water. To swell the buds to the largest possible size, take half an ounce of sulphate of ammonia to a gallon of water and give a copious watering twice or three times each week. If plants are infested with black or green fly, it will be well to fumigate two nights in succession before the flowers begin to show color.

Horticultural Notes.

Popular Gardening commends for low spots the common elder as a summer bloomer.

J. M. Samuels of Kentucky has been appointed chief of horticulture of the World's fair.

There appears to be a permanent and active demand for American apples for European markets.

The orange crop of Florida, according to Florida exchanges, will be the largest in the history of the state.

The following officers were elected at the twenty-third biennial session of the American Pomological society: Prosper J. Berckman, of Augusta, Ga., president; G. L. Watrous, of Des Moines, first vice president; G. C. Brackett, of Denmark, Ia., secretary; Benjamin G. Smith, of Cambridge, Mass., treasurer.

New Flowers For 1892.

Excelsior Everblooming Stocks.

The most valuable variety of stock in cultivation, the seed should be sown in February or March, in shallow boxes, and placed in a warm sunny window, or in the greenhouse, and when the plants are large enough to handle, trans plant into other boxes, and as soon as the weather will permit, about May 1st, plant in the open ground about one foot apart, and you will have a grand display of beautiful white sweet scented flowers that will last all summer.

The Giant Collection of Pansies.

Twelve beautiful colors mixed. Everybody is acquainted with these beautiful flowers. Cultivation same as for Stocks.

Imperial French Asters.

Twelve colors mixed. This beautiful strain of Asters must be seen to be appreciated, as it should be. The Aster is very easily grown, and delights in a deep rich soil. For early flowers seed should be sown in the house, or greenhouse, in March or April, same as recommended for Stocks. As the late blossoms are the finest, it is best to sow the seed thinly out of doors early in May, and when the plants are strong enough, transferring them to the beds where they are to flower.

Giant Cockscombs.

This variety is said to be the largest of these free blooming graceful plants, producing immense spikes of beautiful feathery and comb-shaped flowers. They make a splendid pot plant, and are fine for the greenhouse or window garden. Although the plants are best forwarded in a hot bed, showy plants can be raised from seeds planted in the open ground in May.

Moon Flower—Ipomea Grandiflora.

One of the most showy of the annual climbers. Flowers pure white, which are produced abundantly at night and during dull days. The flowers are also very fragrant. These packets of choice seeds would cost 25 cents each at any Seed Store, but if you wish to get them absolutely free, you have only to send (any time previous to March 1st,) 25 cents to pay for a years' subscription to FARM AND VINEYARD, and you take your choice of either of the above packets of choice seeds delivered free with your mail, or we will send 5 papers and 5 packets of seeds for ONE DOLLAR.

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Keeping Irish Potatoes.

The North Carolina experiment station calls the attention of southern farmers to a method for keeping Irish potatoes in edible condition after March 1, published by the French minister of agriculture in an official bulletin. This method of preservation consists in plunging the tubers, before storing them away, for ten hours into a 2 per cent. solution of commercial sulphuric acid in water—two parts of acid to 100 parts of water. The acid penetrates the eye to the depth of about one-fortieth of an inch, which serves to destroy their sprouting power; it does not have any appreciable effect upon the skin of the potatoes. After remaining in the liquid ten hours the tubers must be thoroughly dried before the storing away. The same liquid may be used any number of times with equally good results. A barrel or tank of any kind will do for the treatment. The acid is so diluted it does not affect the wood. Chemical analysis shows that potatoes treated by this process are as nutritious and healthful after eighteen months as when freshly dug, but they are, of course, worthless for planting.

ROADS IN FOREIGN COUNTRIES.

Interesting Reports on Highways Made by United States Consuls.

More than a year ago the state department at Washington sent a circular letter to all United States consuls in foreign countries asking for reports on methods and cost of road building and maintenance in the countries where the consuls were stationed. These reports have been received and issued by the bureau of statistics. Many of them are most interesting, for they show how far behind the times America's country roads are.

Francis B. Loomis, commercial agent at St. Etienne, France, reports:

"The road system of France has been of far greater value to the country as a means of raising the value of lands and of putting the small peasant proprietors in easy communication with their markets, than have the railways. It is the opinion of well informed Frenchmen who have made a practical study of economic problems, that the superb roads of France have been one of the most steady and potent contributions to the material development and marvelous financial elasticity of the country. The farreaching and splendidly maintained road system has distinctly favored the success of the small landed proprietors, and in their prosperity and the ensuing distribution of wealth lies the key to the secret of the wonderful financial vitality and solid prosperity of the French nation.

"In the high, mountainous regions of the Isere I have seen, after violent summer rain of thirty-six hours' duration, fifty yards of national road, including a small bridge, washed away by a fearful torrent rushing down from a cloud capped field of ice with an almost vertical fall of 2,000 feet. In three hours and in the midst of a severe storm I have seen that same road repaired temporarily and made passable by the road men in this remote and little frequented region.

"It is this never failing watchfulness and promptness in repairing roads, coupled with thorough and honest construction, that gives France a system of roads which is at once a source of national strength and of national pride."

The manner of maintaining the Austrian state roads is described by Consul General Goldschmidt at Vienna:

"The maintenance of the Austrian state roads is carried on after the system of the so called recovering. After numerous experiments with other systems of keeping the roads, which have always failed, the above method has ever proved the best. According to this method the smaller defects of the road are continually repaired by the regular roadkeepers by removing the dust and mud from the ruts and hollows and filling them with gravel. It is then as a rule left to the passing wagons to pack these stones and roll them in. After certain longer periods of time, when the ballast of the roadbed has been thoroughly worn out, certain lengths of the road are again completely covered with ballast up to their normal height. This work is as much as possible carried out in wet weather, as a rule in the fall and spring of the year.

"The rolling of the new layers of ballast, as formerly practiced, is now omitted. Experiments which have been made with rolling and with the so called patching system in the years 1856, 1858, 1861, 1864 and 1868 have neither financially nor technically given any satisfactory results. The reason for this may to a great extent be found in the circumstance that the most of the roads are not constructed in the manner of regular highways and were not provided with sufficiently thick layers of ballast."

One statement made by Consul Williams at Havre is particularly significant. He says:

"The American pavements are very much better constructed than are those of France, all classes being considered. They, however, become destroyed in a short time, while those of France increase in excellence with age, until the difference is very marked. These differences arise from neglect with our authorities to promptly and properly repair and from the constant damage inflicted by the narrow tires of freighting vehicles.

"In France all roads have perpetual attention. If, from weight of load, from rain, or other cause, a hollow, rut or sink is formed it at once receives attention, its surface usually roughened by picking so that new material will adhere, and then the depression filled slightly, rounding with broken stone or stone chips. If the space repaired be of limited area the rolling of the new coating is left to the wide tires of the heavy carts, but with extended areas a steam roller is brought for use.

"If a broad economy should be followed with the objective to make the highways of the United States like those of France, the first labor should be given to establish easy grades by cutting hills and filling valleys. This once done is forever done, and no road should be made until a grade not greater than one in twenty should be made, for to change the grade of an improved road makes waste of all the expense before incurred in its making. Thus grading is economy's first law, and is here the engineer's primary act."

With such splendid examples of what good roads will do for a nation before the people, the frightful condition of the average American highway seems inexcusable. The idea that a farmer in his full senses will fight against the improvement of the roads over which he is forced to haul his produce, when it has been proved that the improvement would save half the time devoted to hauling, would make half the horses devoted to hauling unnecessary and would add tenfold to the cash value of his farm is almost incredible. But that is precisely what hundreds of American farmers have done and are doing. But the demand for nationally constructed and carefully maintained highways is growing in America and cannot be ignored much longer.

What would good roads do for farmer Jones? They would increase the cash value of his farm, permit him to get his produce to market earlier, save his horses, save his harnesses and save his wagons.

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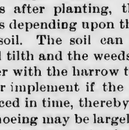

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THE DAIRY

CHOPPING UP CORN FODDER.

Do Not Let the "Next Cow" Muss the Fodder.

I may not be called orthodox in my belief, but if fed in small quantities at a time so that it will be eaten up clean I doubt if cutting dry corn fodder pays. I have cut corn fodder and fed it whole by way of comparison, and when the latter was fed in small amounts at a time I could not see the gain in a way that showed any return for my labor. I found however that I could induce a cow to eat more stalks up clean at a feeding by cutting them in ½-inch lengths, but on dividing the uncut stalks that would represent the cut fodder into two feeds the amount rejected was very small. I found it a better way to cut up what was left of the rejected stalks, put a little meal upon them and feed them now and then as a luncheon, and so I am cutting nine-tenths of the fodder.

One of the chief reasons why so much fodder is wasted in feeding stalks out of doors, and also where the mangers are crowded with fodder when feeding in the barn, is the mussing of it by the "next cow." It is nearly impossible to get a cow to touch an ear of corn that has, even momentarily, been in another cow's mouth; and I have noticed that the same was nearly the case when stalks are fed in the manger; so when I fed stalks—before the silos were built—I put partitions in the mangers so that two cows could eat together, and if about "so much" was fed, the stalks were eaten up clean.

One winter I tried cutting stalks for two cows; after feeding them all the whole stalks they would eat up clean I fed them all the cut stalks they could consume in the same way without changing the grain ration, and after a week's trial they had not increased the yield of milk an ounce, and after this I let them cut their own stalks. In cooking or soaking the stalks I have had no experience, nor do I recall any experiment that shows that after the natural juices have been dried out of a plant any plan of steaming, cooking or soaking has showed better feeding results than does the slower mastication of the food in a dry state, adding the water as drink a few hours later.

That cutting food adds to its feeding value is doubtful; beyond this, the cutting induces an animal to eat more and reject less. Where dry stalks are readily consumed, and very little is left, my vote would be against cutting. If the cattle will reject more than 8 per cent. of the food, if bright and good, I would then say that possibly it might pay to rig up a power cutter.—John Gould in Rural New Yorker.

WHERE TO KEEP HONEY.

Good Advice Given by G. M. Doolittle in Gleanings in Bee Culture.

Some think that the cause of honey becoming watery is due to the bees not having thoroughly ripened it before sealing it, but if they used thought on the subject, they must see the fallacy of such an idea. Whether ripened or not, the honey can only ooze from the cells after being capped on account of a larger bulk of liquid being in the cell afterward than there was at the time the bees sealed the cell. This can come from only one source which is always brought about by either cold, damp weather or a noncirculation of air, or both. Honey swells only as it becomes damp, and the first that will be seen of that dampness will be in the unsealed cells where the honey will have become so thin that it will stand out beyond the cells, or in other words the cells will be heaping full. If the dampness remains, the sealed honey will soon become transparent, while the honey from the unsealed cells will commence to run out, daubing everything below it, and eventually, if the cause is not removed, the capping of the cells will burst, and the whole will become a souring mass.

When I began to keep bees I stored my honey in a tight room on the north side of the house, where it usually remained from four to six weeks before crating for market. In crating this honey I always found the center and back side of the pile watery and transparent in appearance. As that which was stored first was always the worst, I thought it must be owing to that being the poorest or least ripened, until one year I chanced to place this early honey by itself in a warm, dry, airy room, when to my surprise I found upon crating it that this first honey had kept perfectly, while the later honey stored in the old room was as watery as ever. This gave me the clew to the whole matter; so when I built my present honey room I located it in the southwest corner of the building I call "my shop," and painted the south and west sides a dark color to absorb the heat of the midday and afternoon sun. On two sides of this room I fixed platforms for the honey. The sections were so piled on these platforms that the air could circulate all through the whole pile, even if it reached the top of the room.

During the afternoons of August and September the temperature of the room would often be raised to nearly or quite 100 degs., which would warm the pile of honey to nearly that degree of heat; and as this large body of honey once heated retained the same for some length of time, the temperature of the room would often be from 80 degs. to 90 degs. in the morning after a warm day, when it was as low as from 40 degs. to 60 degs. outside at 6 o'clock a. m. By this means the honey was being ripened each day, and that in the unsealed cells became thicker and thicker, when by Sept. 15 or 20, or after being in the room from four to seven weeks, the sections could be tipped over, or handled in any way desired, without any honey running from even the unsealed cells that might happen to be around the outside of the section.

By having the door and window open on hot windy days the air was caused to circulate freely through the pile, when I found that it took less time to thoroughly ripen the honey than it did where all was kept closed. In doing this, of course it is necessary to provide screens, so as to keep flies and bees out of the honey room. If I wish to keep honey so late in the fall that the rays of the sun fail to keep the room sufficiently hot, or should I desire to keep it into the winter, or at any time when the temperature of the room falls below 70 degs. while the honey is in the room, I build a fire in the room, or use an oil stove to heat it up to the proper temperature of from 90 degs. to 100 degs. In this way honey can be kept perfectly for an indefinite period, and can always be put upon the market in the very best condition.

Worthy of Note.

Among tomatoes attracting attention is McCollum's Hybrid, an early sort of excellent quality.

The grape has increased in Massachusetts faster than any other small fruit and is largely grown in the northern section near New Hampshire.

Grand Rapids is the name given to a forcing lettuce which is recommended by those who ought to know.

Ivy Geraniums.

Souv. Charles Turner is larger and brighter in color than the grand old variety, Count H. de Choiseul. This is a novelty of merit and worthy of culture. Mme. Cozy is quite remarkable, as showing so plainly the cross between the ivy and zonal families. The flower is semi-double, quite large, and very intense scarlet, and the leaf has the form and color of the zonals and the texture of the ivies; destined to be very useful.

The merciful man, yes, and the businesslike man, keeps his wagon axles so well oiled that the strength of his horse is not wasted.

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FARM·FIELD AND GARDEN

POINTS IN TOMATO CULTURE.

A Summary of Results Obtained at the Cornell University Experiment Station.

For several years past the tomato has been the subject of investigation and study at the Cornell University experiment station at Ithaca, N. Y., both in the open field and under glass. Some of the results have been previously published, but a summary of what has been learned, including much for the present year, will be of general interest to tomato growers. As to fertilizers, the best for tomatoes are those which produce their effects early in the season. Early applications of nitrate of soda produced early results, but nitrate of soda is an incomplete fertilizer and should not be used to the exclusion of other fertilizers unless the soil is already rich in potash and phosphoric acid. Upon poor soils it is of but little advantage when used alone.

The experiments of two years show that tomato plants that are early set in the field are less injured by inclement weather than is generally supposed, and that very early setting on well prepared land appears to be advisable.

Two transplantings gave better results than three, but much depends upon the condition of the plants, their age and the way in which they are handled. Slight trimming during July and August appears to be beneficial.

Single stem training of tomatoes gave twice as much yield per square foot as ordinary cutting, somewhat earlier results, and it greatly decreased injury from rot.

Little if anything appears to be gained by selecting seeds from first ripe fruits with no reference to the character of the plant from which they come. Upright and open training tends to decrease injury from rot.

Keeping quality does not appear to be corelated with solidity, or associated with varietal differences, and is not therefore associated with best shipping qualities.

Tomatoes mix in the field, and even hybrids with the common type of tomato may arise spontaneously. Red tomatoes sometimes come from yellow and purple fruits.

Tomatoes run out, or lose their distinguishing characters. Even the most popular varieties of ten years ago are not often obtained true to type at the present time.

Ignotum is the best variety for all purposes grown at the station this year. Among the introductions of the year the following are represented as the most promising: Cumberland Red, Longkeeper, Mitchell, Potomac, Red Mikado and Stone.

MANURE IN WINTER.

Fermenting Manure in Heaps—Joseph Harris' Method of Piling Manure.

Joseph Harris, recognized authority on the subject of manures, believes there is much to be gained by properly fermenting manures. Following are some remarks made by him in The Rural New Yorker on this subject:

Fermenting manure makes the insoluble plant food more soluble, and consequently more active and valuable. I feel confident that we can pile manure out of doors and allow it to ferment all winter without any loss of ammonia worth talking about. Many farmers say they have tried to ferment manure in winter, but the pile lies dormant and cold, and the manure they throw on every day from the cow still freezes solid. No doubt fermentation is caused by the microbes. These microbes, or fungus plant, will not grow at a low temperature, but must have food—heat and air. If you are going to start a fire you get kindlings that will burn quickly and heat the wood until it burns. Cow manure is wood and needs plenty of kindling to make it burn. Horse or hen manure is easily started and ferments so rapidly that a heap of it is apt to firefang. It is just what is needed to mix with the cow and pig manure. In starting a pile of manure, especially if it contains much cow dung, it is a good plan to get a few loads of fermented horse, sheep or hen manure. We start the fire with horse manure and pile on anything we have in the yards or stables or henhouse. In my own case we wheel the manure up a plank on the heap and spread it every day as soon as it is wheeled on.

The pile should be about five feet high, less or more, according to the rainfall. The more rain or snow the higher should be the pile. When the pile is high enough start another alongside. In doing this, especially in cold weather, take a quantity of hot manure from the old pile. If there is any accumulation of manure in the sheep or pig pens draw it out and spread it on the pile. Break up the hot manure from the old pile and mix it with the fresh manure. This hot fermenting manure is full of the microbes that act as "yeast" and cause fermentation. Do you turn over the pile? Sometimes and sometimes not. It is a good thing to do. It mixes the manure, breaks up the lumps and starts fermentation afresh. If the manure is to be used on a pile some distance from the barnyard, I draw it out from the piles in the barnyard and make it into piles in the field. In the field make the pile about five feet high and five wide and of any desired length. In making the new heap it should not be forgotten that we are "turning the pile"—the object of which is to mix the manure and get it uniform and induce it to fresh fermentation. In the old pile the outsiders will not be fermented. Some layers that were put on in very cold weather will be cold and raw while others will be warm. Pains should be taken to mix these all together. Another important point is to build up the pile square on the sides and ends like a hotbed, and not sloping like the roof of a house. A conical heap is the worst possible form, as the greatest proportion of a given quantity of manure is exposed to the atmosphere, while if carefully made into a square heap a less proportion will be exposed. Again, the heap needs water, and the sloping sides carry it off.

If the manure is very rich, or you have mixed with it bone dust or other matter rich in nitrogen, or a considerable quantity of hen manure, there may be danger of too rapid fermentation. In that case the best remedy is to saturate the heap with water, and it would be an excellent thing to mix some superphosphate with the water, say a pound to a pail of water. If this cannot be conveniently done, the heap should not be made over three or four feet high. In farming no ironclad rules can be laid down. We must exercise our judgment and run our chances. It may be remarked that driving over the heap or even trampling it down with the feet will check excessive fermentation.

A $500 prize is offered by E. A. Mansell, of Shropshire, England, for the best American bred Shropshire ram which shall be exhibited at the World's Columbian exposition.

The government of Victoria, South Australia, is going to prevent the destruction of the wild turkey, which is considered the best destroyer of locusts and other insect pests that can be found.

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In the earlier chapters, Senator Peffer describes the condition of the farmer in various parts of the country, and compares it with the condition of men in other callings. He carefully examines the cost of labor, of living, the prices of crops, taxes, mortgages, and rates of interest. He gives elaborate tables showing the increase of wealth in railroads, manufactures, banking and other forms of business, and he compares this with the earnings of the farmer, and also wage-workers in general. In a clear, forcible style, with abundant citations of facts and figures, the author tells how the farmer reached his present unsatisfactory condition. Then follows an elaborate discussion of "The Way out," which is the fullest and most authoritative presentation of the aims and views of the Farmers' Alliance that has been published, including full discussions of the currency, the questions of interest and mortgages, railroads, the sale of crops, and other matters of vital consequence.

This book is the only one which attempts to cover the whole ground, and it is unnecessary to emphasize its value. It is a compendium of the facts, figures, and suggestions which the farmer ought to have at hand.

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Bagging Grapes, Again.

M. T. Donmoyer, of Berks, (eastern district), writes: "I am still of the opinion that no perfect grape can be grown unless it is bagged. The bag should be applied when the grapes are about the size of No. 8 shot. Not only is the berry more perfect, but the quality improves 25 per cent. I like the Niagara well. I find the Berckman hybrid desirable for a late grape; in fact I have had them on the vines until freezing weather. The Moyer grape promises well. I have discarded the following owing to mildew—Rogers' Nos. 6 and 15. In fact all of Rogers' hybrids rot badly with me. The Empire State is a perfect failure. The Concord drops badly. I think it has had its day."

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If you will get us a club of only four subscribers at our regular clubbing rates, 25 cents each, we will send free to any part of the United States one Concord vine, one Brighton vine, one Wyoming Red vine, and one Niagara vine. These four vines alone are worth a dollar bill.

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WORLD'S FAIR NOTES.

A project has been inaugurated to have an international rifle shoot at Chicago at some time while the Exposition is in progress. It is proposed that picked teams from the U. S. Army and national guard compete with teams from other nations.

The National Association of Woolen Manufacturers has decided to make a united exhibit at the Fair.

The Wisconsin World's Fair Board has issued a circular to the farmers of Wisconsin asking them to exhibit the very best products of their farms at the county fairs and State fair of this year, as the exhibit for the World's Fair will be selected to a considerable extent from cereals and other farm products which are awarded premiums at those fairs.

The Lord Mayor of London, it is announced, will form a committee to raise the sum necessary to send to the Exposition a selected number of representative workingmen from London, with a view of their making reports on the industrial exhibits there. Similar action was taken in case of the last two Paris Expositions.

Japan has appropriated $630,765 for its representation at the Exposition. A splendid Japanese exhibit is assured.

On the three evenings during the exercises dedicatory of the Exposition buildings, October 11, 12 and 13, fireworks to the value of $25,000 will be displayed. The contract has already been let.

The beautiful pictures, Christ before Pilate and Christ on Calvary, are still offered. Either picture and a year's subscription to this paper, for only 50 cents.

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We want a bright boy or girl in every township, to take orders for FARM AND VINEYARD, and our beautiful picture, Christ Before Pilate. The paper a year, and the picture, both for 50 cents. It sells on sight. Some of our boy and girl agents are making from $5 to $20 a month. Write at once for terms.

Worse Than Black Rot.

Correspondent John Donaldson, of Armstrong county, reports having encountered a very destructive bug—small, black and glossy—which ate the centre out of grape buds before they bursted. The bugs were hard to catch and destroy and did greater damage to the grape crop than the black rot.

If you have any article you wish to sell, advertise in FARM AND VINEYARD.

Deafness Can't be Cured

by your local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure Deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed Deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by Catarrh) that we can not cure by taking Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & Co., Toledo, O.
☞Sold by Druggists, 75c.

You will do yourself and us a great favor, my friends, if, when writing to advertisers, you say you saw their advertisement in FARM AND VINEYARD. They always use FARM AND VINEYARD customers well.

Special Clubbing Offer.

If you wish to take any other paper or magazine in combination with FARM AND VINEYARD, it will pay you to write to us and get our prices. We have secured special rates for subscribers of FARM AND VINEYARD, which, if taken advantage of, will allow you, in most cases, to get two papers for the price of one.

The following are a few of the leading papers and magazines. A complete list will follow:

	Price	Farm and Vineyard.	Our Price for Both.
The Rural New Yorker, price	$2.00	$ .50	$1.90
" American Garden, "	2.00	.50	1.90
" Farm Journal, "	.50	.50	.50
" Chicago Weekly Times "	1.00	.50	1.00
" American Rural Home "	1.00	.50	1.00
" Amer. Sheep Breeder, "	1.00	.50	.90
" Cleveland Leader, "	1.00	.50	1.00
" Yankee Blade, "	1.00	.50	1.00
" Fanciers Review, "	.35	.50	.50
" Buffalo Weekly Express "	1.00	.50	1.00
" " Sunday " "	2.00	.50	1.75
" Farmers Record, " (Devoted to Farmers' Organisations and Farm Topics.)	1.00	.50	.80
" N. Y. Weekly World, "	1.00	.50	1.00
" Cosmopolitan, "	2.40	.50	2.00
" Ladies Home Companion "	.50	.50	.65
" Western Garden, "	.50	.50	.50
Our Country Home, "	.50	.50	.50

THE DAIRY

LEARNING THE DAIRY BUSINESS.

From an Old Fashioned Dasher Churn to Silos and a Creamery.

Mr. W. H. Gilbert is a prominent New York dairyman, whose place is at Richland, eight miles south of Lake Ontario. His farm is a sandy loam underlaid by gravel, and on this unpromising soil Mr. Gilbert has gradually built a famous dairy farm and creamery. He began in 1876 by losing money. He only kept the farm because he could not sell it. Meantime he studied books and dairy papers. His first progress was when he changed old fashioned native cows for Jersey stock. His next was improved methods of churning. Things most worth knowing came to him through losses for want of acquaintance with the better way, and these things he never forgot.

He wanted granulated butter, and learned that by adding water to the cream he could get it. Next he found that it was better to wash buttermilk out of butter than to work it out. He made no money to speak of for several years. But there was this difference between Mr. Gilbert and many who make no money when first going into the dairy or butter business. They give up. He kept on. In a comparatively short time he triumphed. The next great stride forward was when he learned the supreme advantage of silage feed. After that things came easier and faster, so that in 1881 he built a creamery and engaged in the butter making business on a large scale. He raises all his own dairy cows, though he also buys milk for the creamery. In 1884 he had on his place ninety-two cows, all of his own rearing.

In explaining his [illegible] to the editor of The Rural New Yo[illegible], Mr. Gilbert said:

"I use a Cooley creamer, revolving box churn and Cunningham butter worker with corrugated rollers. When the milk is brought into the creamery in winter I at once add to it about 12 per cent. of water sufficiently warm to raise the temperature of the mass from 95 to 98 degs. It is at once put in the Cooley creamer and as rapidly as possible cooled with ice down to 40 or 45 degs. It is skimmed after about eleven hours' setting. We milk at 6 a. m. and 6 p. m. the year round. I use the Boyd starter to ripen the cream. This is, as you know, made from sweet skimmilk. The process of ripening requires twenty-four hours.

"When the cream is put into the vat and the starter added I warm it up to 70 degs. in winter and 65 degs. in summer. I use for this purpose a cylindrical pail of tin about four inches in diameter and two feet long. I fill this with hot water and then stir the milk with it, keeping a thermometer in the other hand. When the required temperature is reached it is covered air tight and not allowed to go lower than 62 degs. In winter I churn at a temperature of 68 degs. and in summer at 66 degs. I use the same cylinder for warming the cream for churning. When the glass clears or the butter separates, I stop the churn, open it and rinse it down with cold brine, pouring it through a hair sieve, so as to make it like a spray. I then carefully draw off the buttermilk, when cold water enough to cool it below 55 degs. is added before the churn is again agitated. If disturbed before that temperature is reached it will gather in masses and you cannot wash it clean.

"It is desirable to get all the milky matter, casein, etc., out before the butter is massed. I use repeated washings until the water comes away clear. To work it properly the butter must be raised to about 60 degs. If worked below 55 degs. it will be crumbly, not compact. To get it to the proper temperature in cold weather I use for the last washing water warm enough to bring up the butter. It is then salted. I use from three-quarters of an ounce to an ounce of salt to the pound of butter. I work it but once, when it is put in prints or packed in tubs right from the butter worker. No mature cow that produces less than 250 pounds of butter annually should be kept in the dairy. I would not discard a young cow that made 200 pounds in her first year; she may do better each succeeding year and at maturity be a valuable dairy animal. My best record was in one year, when I milked eighty cows which averaged 271 pounds of butter each."

"What do you do with your skimmilk and buttermilk?"

"Feed them to calves and pigs. I prefer grade Berkshires for swine. They seem to thrive admirably with me."

"What prices have you realized for your butter?"

"I figured up before going to a dairy meeting in the spring of 1890, and found that for the seven or eight preceding years I had received an average of forty cents. It has been a little lower since."

The editor The Rural New Yorker says:

Mr. Gilbert's barn is a long, low building, with only an attic for a mow. He reasoned that with ensilage much less mow room would be needed, and he has found what he has amply large. The drop is covered with a grate, through which the droppings pass into a water tight trench, into which some absorbents are put. At intervals the wagon is driven right around the stalls, and the manure is handled but once from the drop to the wagon, and thence to the fields. Sawdust is used for bedding, and plaster is sprinkled through every day, thus absorbing all the odors and adding to the value of the fertilizer. A swinging stanchion is used in the stables. The lean-to is used for box stalls, for cows about to drop calves and for young stock.

Water is carried to each cow in a trough, and she helps herself when it is wanted. The bottoms of the silos are on a level with the stable floor, and the ensilage is loaded into a car which takes it to the cows. Mr. Gilbert has several improvements in the stables under way.

His success is a capital illustration of what perseverance, coupled with intelligent and studious methods, may accomplish. He has proved that the soil of that section is fertile, and that dairying may be made a profitable industry—not by controlling the price of the finished products, but by reducing the cost of production.

Per Cent. of Butter.

Somebody with a head for figures has been to the trouble to search out how much butter to the hundred pounds of milk is produced on an average by the creameries in different parts of the world. The result is given in the following table. If the figures are correct, then Manitoba can get most butter out of 100 pounds of milk:

Manitoba	4.79
Quebec	4.25
United States	4.00
Ontario	3.75
All Europe	3.50

Poultry Points.

After burning sulphur in the poultry house (some people use it as a remedy for roup and lice) do not let the chickens out into rain or mist. They will catch cold then very easily, the same as a person who has been taking sulphur.

Don't feed dry oats; scald them well first.

If you want to get eggs, keep the hens from ever getting chilled. This is the biggest "secret" of the egg business.

Don't give food or drink to a fowl for at least twelve hours before killing it.

Ground bone is not only excellent to prevent leg weakness and for the general health, but it encourages egg production immensely.

At the present season the dusting box serves its most valuable purposes.

Whole wheat is fine egg food, but too much of it may cause looseness of the bowels.

Scaly legged fowls are a disgrace to any yard, for they are generally caused by neglect and are easily cured.

According to one estimate the cranberry product on Cape Cod exceeded last year the largest yield of any previous crop.

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FOR RURAL HOMES!

THE STANDARD AMERICAN POULTRY BOOK,
THE AMERICAN LIVE STOCK MANUAL,
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CONDENSED CYCLOPAEDIA OF USEFUL KNOWLEDGE,
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THE STANDARD AMERICAN POULTRY BOOK. An entirely new book, involving all the latest ideas in poultry keeping. It is a work intended to teach the masses of farmers the secret of success in the poultry yard, and its teachings, if followed, will add enormously to the earnings of every flock of fowls. The following are only a small portion of the topics treated in this book: How to Start and Stock a Hennery; Poultry Houses, Cheap and Expensive Yards, Coops and Enclosures; Poultry Keeping for Profit; Poultry on a Large Scale; Poultry Raising as a Business; Feeding and Laying; Winter Egg-Production; The Hatching Period; Preparing Nests for Sitters; Spring Breeding of Poultry; the Hens for Farmers; How to Produce Layers; Good and Cheap Incubators; How to Raise Artificially Hatched Chickens; Caponizing; Packing Eggs for Market; Packing Poultry for Market; Feeding Hoppers; Drinking Fountains and Grain Chests; Eggs and Pullets; Preserving Eggs; Diseases of Poultry—Chicken Cholera, Pip, Gapes, Roup, Scaly Legs, Lice, Egg Eating, Crop Bound Fowls, etc.; the Plymouth Rocks; the Wyandottes; the Brown Leghorns; the Golden Spangled Crested Polish; the White Crested Black Polands; the Langshans; the Silver Spangled Hamburghs; the Houdans; the Buff Cochins; the White Cochins; the White Leghorns; the Golden Pencilled Hamburghs; White Shanghais; the La Fleche Fowls; the Gray Dorkings; the Brahmas; Game Fowls, Bantams, etc.; How to Fail; Management of Chickens; Killing Poultry; Preparing against Vermin; Fencing; Management of Ducks; Raising Turkeys, Fattening Geese; etc., etc. It is a large book of 128 pages, 12mo, with handsome cover. It is profusely illustrated and handsomely gotten up in every respect. No man or woman who owns an acre or more of land can afford to be without it.

EVERYBODY'S LAW BOOK. A complete compendium of business and domestic Law, by a prominent member of the New York Bar, containing concise explanations of the general laws, and the laws of the several States, regarding Administrators and Executors, Affidavits, Agency, Agreements, Apprentices, Arbitration and Award, Assault and Battery, Assignments, Attachments, Banks, Bills of Exchange, Checks and Promissory Notes, Bills of Sale, Chattel Mortgages, Citizens and Aliens, Common Carriers, Contracts, Corporations, Deeds and Mortgages of Real Estate, Descent and Distribution, Dower, Easement, Exemptions, Farmers' Law, Fences, Fixtures, Garnishment, Gifts, Guaranty, Guardian and Ward, Heirs and next of Kin, Homestead Exemptions, Husband and Wife, Infants, Interest and Usury, Landlord and Tenant, Libel and Slander, Liens, Limitation of Actions, Marriage and Divorce, Rights of Married Women, Master and Servant, Parent and Child, Partnership, Payment and Tender, Personal Property, Power of Attorney, Principal and Agent, Privileged Communications, Railroads, Railroad Real Estate, Receipts and Releases, Replevin, Right of Way, Seduction, Trustee Process, Warranty, Water Rights, Wills and Codicils, Together with complete forms of Acknowledgments, Agreements, Articles of Copartnership, Assignments, Award of Arbitrators, Bills of Sales, Bonds, Chattel Mortgages, Contracts, Deeds, Executators' and Administrators' Accounts, Interest Table, Liens, Mortgages of Real Estate, Powers of Attorney, Releases, Satisfaction Pieces, Wills and Codicils, etc., etc., specially adapted for the daily use of those who are not lawyers, with directions for their preparation. A large volume of 128 pages, 12mo, with handsome cover.

THE MODERN COOK BOOK AND MEDICAL GUIDE. This is practically two books in one—a perfect cook-book and a perfect medical book—and there is so much in it, and so much care and pains have been taken in its compilation, that we feel perfectly safe in asserting that the Cooking department is fully the equal, in quantity and quality of contents, of any low-priced cook-book ever published, and the same as to the Medical department herein as compared with any low-priced medical book in the market. The cooking recipes number 627, and include Breakfast Dishes, Soups, Meats and Poultry, Fish, Vegetables, Salads and Relishes, Bread and Rolls, Jellies and Preserves, Puddings and Pies, Fancy Dishes, Cakes, Confectionery, Ice Cream and Summer Drinks. The compilation of this department was superintended by a practical housekeeper, every recipe will be found reliable, and it has been pronounced one of the best, most complete, and practical cook-books ever published. The Medical Department will be found fully the equal of any doctor book published at one dollar or less. It tells you how to cure by simple means, available in every home, every disease and ailment that is curable. It will save you many dollars annually in doctors' bills and patent medicines. THE MODERN COOK BOOK AND MEDICAL GUIDE is a large book of 128 pages, 12mo, with handsome cover.

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Farm and Vineyard, Erie, Pa.

FRUIT AND FLOWERS

QUICK GROWTH IN TREES.

Particulars Regarding the Growth of That Beautiful Lawn Tree, the White Pine.

Is the reader among those who fancy it takes a long time—many years—to obtain telling effects from tree planting? The editor of the American Garden is not, and he tells why in these words:

MAY, 1889—AUGUST, 1889—AUGUST, 1890—AUGUST, 1891.

On the experiment grounds at La Salle-on-the-Niagara are several scores of beautiful pine trees from five to six feet high. These were planted May, 1889, at which time they were small seedlings ten to twenty inches high. To-day they are of a man's height, with massive spreading foliage, such as results from healthy growth in uncrowded quarters. In a year from now it is expected that many of them will be fully ten feet high, with dense bottoms six feet across. Let us particularize in regard to growth of that beautiful lawn tree, the white pine.

To the left of the cut is the seedling, ten inches high, as it came from the nursery in May, 1889. The second figure shows the same after the first season's growth had been completed. The next figure represents our tree in the handsome form it had reached a year ago. To the right is shown our subject at the end of the present season's growth. It reaches nearly six feet in height. It is but one of eight white pines in a mass, all planted at the same time and approximately of the same size. There are many hundreds of other trees, shrubs and vines on our grounds, all planted at the same time, which now make an equally good showing.

How was it accomplished? Not by high manuring, or by summer watering—it was as a result of less expense than that.

First, the planting was carefully done, not subjecting the roots to the air a moment longer than necessary. Second, the trees being set into ordinary garden land, each one was treated to two shovelfuls of compost at planting time; said compost was nine months old and consisted of two parts rotten sod, one part manure. It was worked in with the soil around the roots. Third, the surface of the beds (cut into sward) has been kept neatly cultivated and as clean as a clean corn field since the day of planting. To sum up: The trees received the simple decent treatment we give our corn patch. Such treatment to newly planted trees always produces surprising results.

Varieties of Gladioli for Forcing.

John H. Taylor, at the last annual meeting of the Society of American Florists, said:

The forcing of gladioli is very unsatisfactory, owing to the large number of bulbs that throw no flower spike. I have tried a few every winter during the past five years and have decided to try them no longer, as I find the percentage of good flowers so small that it does not pay for the trouble. The best results have been obtained by forcing two inch bulbs very late the first year, planting them in six inch pots during the winter and starting them in a cool house to make roots.

For March they can be removed to a warm, sunny bench, and flowered by June or July. After flowering the bulbs should be gradually ripened in the pot by withholding water, and in October, if the bulbs are in good condition, they can be potted in a light, rich soil, and placed for a few weeks in a cool house. As soon as signs of growth are observed they should be placed in a greenhouse having a night temperature of 65 degs. and a day of 80 degs. A crop of flowers should be had in February or beginning of March.

The best varieties for forcing are the following: Shakespeare, Ciceron, Brenchleyensis, Snow White, Isaac Buchanan, Baroness Burdette-Coutts, Eugene Scribe, Flamboyant, La Candeur, Le Vesuve, Marie Lemoine, Le Filien, Napoleon III, Pepita, Addison, Enfant de Nancy, Mme Monneret, Ceres.

New Sorts of Currants and Gooseberries.

Mr. J. T. Lovett says: "Fay's Prolific is a success with me and I hear none but good reports of it from any quarter. North Star gives promise of being a valuable variety, especially for the market grower. Black Champion is an improvement upon the old Black Naples. The berries are larger and produced in greater abundance. I am told it is of better quality. The Crandall has some merit for culinary purposes. It is of strong growth, exempt from the attacks of insects and disease and very prolific; but the fruit is too harsh and austere to be acceptable as a dessert fruit. The berries are exceedingly large, almost equaling in size the Delaware grape and are decidedly attractive. The claim that a good jelly can be made from it is founded on fact, as I can bear witness.

The Industry gooseberry has not proved the success with me that it has in many other places. In Monroe county, N. Y., and upon the Hudson river it is giving the greatest satisfaction. I also saw it fruiting in perfection in Atlantic county, N. J., the past season. Although the best of the foreign varieties I have yet tasted, it loses its leaves prematurely and fails to ripen its fruit quite as often as it perfects it.

A Beautiful Begonia.

Begonia Glorie de Sceaux is a distinct and beautiful warm greenhouse plant. It is distinct from any other known variety, and is one of the most valuable sorts of recent years. It is a wonderful flower producer during winter. Its manner of growth and foliage are all that can be desired, the leaves being of a dark bronzy plum color with a metallic luster. The bloom is borne in large, compact trusses, the florets are large and perfect in outline, and in color a delightful shade of pink

A Good Bean Crop.

Now that improved methods of harvesting have relieved the severe backaching labor incident to pulling beans, they may be grown on larger scale with less forebodings. They are best grown on level, dry land of heavy texture, but cultivated until it makes a mellow seed bed. Too much growth of top is the danger from heavy manuring with stable manure. Mineral fertilizers are best for this crop, and on a clover ley plowed after the clover has nearly got in blossom the yield is often twenty-five to thirty bushels per acre. It pays better than wheat, but needs frequent alternations with clover to maintain fertility, as the bean crop is an exhaustive one.—American Cultivator.

CONSUMPTION.

I have a positive remedy for the above disease; by its use thousands of cases of the worst kind and of long standing have been cured. Indeed so strong is my faith in its efficacy, that I will send TWO BOTTLES FREE, with a VALUABLE TREATISE on this disease to any sufferer who will send me their Express and P. O. address. T. A. Slocum, M. C., 183 Pearl St, N. Y.

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HIGH-BRED SEED POTATOES. One barrel worth two of Northern Seed. All that grow Irish Potatoes should have my Catalogue FREE, with Testimonials.

J. W. HALL, Marion Station, Md.

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FARM FIELD AND GARDEN

INCUBATORS.

Are Homemade Affairs Profitable, or Will It Pay to Buy Factory Built Machines?

One reads in the various agricultural exchanges of the successes made with homemade incubators, but not often does the amateur manufacturer of a machine air his failures in print. Following is a communication from a Massachusetts poulterer to Country Gentleman, who recounts his lack of success with an incubator constructed with great care and operated with patient watchfulness. His machine, like other homemade ones, was not self regulating—a feature he soon discovered was highly important. A hot water tank supplied the heat; below this tank was placed the egg drawer, and below this was a drawer containing water pans for the supply of moisture. The machine was made double, with packing between the two cases, so that the heat could not readily escape from the interior. The inner door to the egg chamber was of double glass, while the outer was of solid wood with woolen cloth bearings, where it touched the casing to insure perfect tightness. A tested thermometer was used and great care taken to secure good results.

This incubator was run for nearly three months and the result was one miserable little chick. Next ducks eggs were employed, but the machine yielded only a harvest of rotten eggs, showing that the germs within them had started with life, but had either received too much or too little heat soon after starting. Such results do not at all indicate that the machine was at fault; it might simply show that it was not properly operated. So the operator purchased a self regulating machine which persons in whose judgment he had confidence assured him would do good work. At the first trial and at a season when the germs of the eggs are less strong than in the spring and summer he hatched 113 healthy chicks from 136 fertile eggs. The conclusions arrived at, in his own words, are as follows:

"Subsequent hatches confirmed me in the belief that unless one is willing to put in a large share of his time watching his homemade incubator, and of actual work in caring for it—drawing off the water, heating water to take its place, and in filling up the tank, and in the various other onerous duties that proper appliances in a factory built machine make simple and easy—he would better invest a little more at the start and get something quite sure, if operated with ordinary intelligence, to give satisfactory results. The loss in time, eggs, patience and in the value of the poultry that would be hatched under better conditions, but which will fail to be hatched again and again in a homemade machine, even when run by an expert, makes it decidedly unprofitable to bother with the homemade article, especially when the best can be bought at so low a price."

Spring Lambs.

A good start is essential to success, and ewes should be in condition to manufacture a large quantity of milk; they therefore must not be too poor. The only food the lamb can take for a few weeks is milk, and to provide a good supply of this the ewes must be fed with suitable food for its production. As with cows and other animals required to yield milk, it is necessary that the mother should receive nitrogenous food: consequently high quality cakes, peas, beans, bran and oats are all specially valuable at this time, but it not infrequently happens that when the flow is unduly increased the mother provides more than the lamb can take, consequently she is not properly milked out, the milk thus goes bad in the udder, and unless watchful precautions are taken she suffers from mammitis or garget; oats should therefore be used with care and discretion.

Until the lambs can feed on their own account, the mothers should convert into milk, or partially digest, a pound weight of strong corn per day, besides making milk from additional food; as the lambs begin to pick about for themselves the corn may be gradually drafted from the ewes' trough to the lambs' trough, but it is more necessary to consider what is the best form for corn to take. A well known authority cites very finely ground linseed cake and the husk of peas as excellent for keeping lambs healthy. Where green fodder has not been provided, the best substitute is found in very finely sliced roots, which should be given at very frequent intervals, and then only in small quantities, otherwise they become stale and the lambs will not be tempted to eat them. The ewe and lamb both require hay—good hay—in fact, on the ordinary farm the best hay should be set apart for the lambs which are to be forced. It is almost impossible to succeed in fattening lambs without good hay

Shooting Hogs.

The Texas Farm and Ranch calls attention to the fact that nine persons in ten, without previous instruction or experience, will in shooting hogs place the bullet too low, making a very bad and disagreeable job for both parties. The gun or pistol should be loaded with not more than half the usual charge of powder, and with deliberate aim at short range the bullet should be planted where the lines drawn from either eye to the opposite ear cross, if the head is in a natural position, and a little higher if the snout is held low.

Watch the Colt's Feet.

Keep sharp watch of the feet of the colts. Have them rasped or pared as often as once a month and be sure that they are leveled so that the coronet on each side of the heels will be at the same distance from the bottom of the hoof. See that the toes are not allowed to become too long. It pays to look after these little things. Neglecting to do so may result in ruining a valuable youngster for life.—American Horse Breeder.

Fair and Square.

We need the facts about lots of comparative and competitive tests between different kinds of separators, and the extractor, all running at different speeds, and feeding, temperature, etc., that we may have a safe limit placed upon each, and then if operators do not heed the rules and the admonition, hold them responsible for the results.

In this connection we will note that we have read of one large factory that had hit upon a plan to at least relieve an honest butter maker from unjust suspicion of incompetency or dishonesty. It was to have a competent person, of their own choosing and under their pay, preside at the weigh can and take the samples and make the tests. The butter maker has in such case nothing to do with the individual patrons, either as to weight of milk or the per cent. of fat in it. He takes the milk in bulk, and is under obligation only to make a good showing in product according to the weight and average test given him by another person.—Hoard's Dairyman.

The American Southdown association will expend $1,000 in special premiums at the World's Columbian exposition.

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THIRD. In its directions for treatment it is not confined to the practice used by any one class of physicians; but it gives, **separately,** and for each disease, the methods used by each of the different "schools" of medicine; and in all cases the prescriptions are made by the most eminent men in their respective modes of practice. This makes the work especially suited to the needs of every family, no matter what "school" of medicine they prefer.

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THE MISTAKE OF THE FARMERS.

They Have Barred Prosperity Away from Them by Supporting Bad Roads.

The secret of America's wonderful prosperity has been the readiness of Americans to adopt improvements and foster them. Progress begets progress. Nearly every line of business has made great strides in the direction of labor saving machinery and new and better methods of manufacture. In hundreds of trades one man is able today to do alone what would have busied twenty men fifty years ago. Nowhere is this tendency of the age more perceptible than in the barns and fields of the farmer. The scythe and sickle have given way to mowing machines and patent reapers, which bind the grain as fast as they cut it. The flails of the past have been replaced by wonderful thrashing machines run by steam. The sower with his bag has resigned in favor of horse power "drills." Even the good old speckled hen is being crowded off the nest by patent incubators which hatch her eggs a hundred at a time. Everywhere on the farm the influence of science can be seen.

The results of these efforts to keep up with the century have not been as gratifying to the farmer, however, as they have to the manufacturer. The latter has prospered and waxed fat and built up great cities, which grow like mushrooms everywhere throughout the land. But the farmer has found his row as hard to hoe as ever. His sturdiest sons and buxomest daughters have deserted the farm for the cities and there is little or no increase in the population of the rural districts. He has had to begin work as early and stop it as late as he did in the days of scythes and flails. The mortgage on his farm has not grown smaller, but has shown a tendency to increase in size. In other words, the farmer is playing in hard luck while pretty nearly every one else gets all he deserves.

So does the farmer. He deserves to play in hard luck, for he has made a big mistake, and we generally and justly have to suffer for our mistakes.

His progress and improvements have come to naught because he began his progress at the wrong end and neglected to make the most important improvement of all. He bought fertilizers which enabled him to raise big crops and bought ingenious machinery to make those crops ready for market, but he, with open eyes and stubborn heart, refused to prepare the way for getting the crops to market after they were raised and prepared. He made his farm fertile, his barns commodious and his outfit complete, but he did all this on an island whose communication with the mainland of the market is made precarious by every storm and cut off completely if inclement weather continues long. It is the most magnificent piece of inconsistency the world has ever seen.

The farmer has improved his farm, but he has refused to improve the roads whose condition governs the prosperity of that farm.

In western New York a great many apples are grown. I remember one year when the crop was large there and small everywhere else, so that it looked as if the western New York farmers would make a great deal of money out of their season's yield. The apple raising tract lay about five miles from the New York Central railway, and I lived on the road which afforded practically the only access to the station. For about a week after the apple harvest began the weather was good and this road was in fair condition. Then there came a series of pouring rains. The mud got deeper and deeper in this road. The wagons, heavily loaded with barrels of apples, were pulled through it with constantly increasing difficulty. At first from twelve to sixteen barrels had been the average load. This dwindled first to ten, then to eight, and finally to six and four. Then the roads became practically impassable, and the apple raisers of that region were actually forced to delay selling their crop until western fruit had flooded the market and the high prices had passed.

They sustained a loss in that single year large enough to have paved that whole road with the best macadam twice over. And that was not the first time nor the last. But the road has not been improved. It is no better than it was then. Nor is this locality a victim of unusual circumstances. There are hundreds of agricultural neighborhoods which are as completely at the mercy of the roads as is this one.

The great argument which is brought against road improvement is that it is so expensive. A few brief calculations will prove the fallacy of this reasoning. In the first place there is more than enough money (or would be if the taxes were paid in cash instead of "worked out") now spent on most of the roads of the country to pay the interest on twenty year bonds for the improvement of the roads and the principal when it comes due, and pay for their careful and adequate maintenance. Investigation will show that in no branch of the public service is there more shameful waste than there is in that governing the roads.

But arguing that it would cost more to build good roads and keep them in good order, there would still be a vast profit on the investment. If you are a farmer, sit down and figure up how much time you lost last year because the "going was bad;" how many extra trips you had to make to the railroad or the market because you could only haul half a load through the mud instead of a full one; how much extra time your hired men put in because they had to drive slowly and were occasionally stuck in the mire; how much it cost to have repairs made in wagons and harnesses which would not have been necessary if the roads had been good; how much it cost to buy and support the extra horses which bad roads forced you to keep.

Figure up all these things and you will find that the sum total is ten times as much each year as your whole road tax amounts to. In good roads lies the salvation of the farmer.

Profits in Poultry Keeping.

The Stockman thinks that women value the hens at something like their true worth, and if they were given entire charge of the poultry and had fair facilities for keeping them they would make something out of them surely. Whether you count in comparison, the labor or the feed or the house, the hens will draw ahead of any other kind of farm stock when it comes to result in dollars. Say a good cow costs fifty dollars and you make a profit on her of twenty-five dollars a year: that's 50 per cent. on your investment. Now fifty dollars will buy 100 large pullets in the fall, and in one year these pullets can be easily made to pay a profit over cost of feed of $125.

Color in Horses and Cattle.

The white color of horses and cattle has been developed from tropical resources, and it is clearly shown by the superiority of the white horses of the desert and the tendency of horses and cattle taken from the colder climates of the north to the hot climates of South America and our southern states, that the gray colors increase and withstand the heat better. The gray horses are more popular in the southern states and hot climates.—Western Agriculturist.

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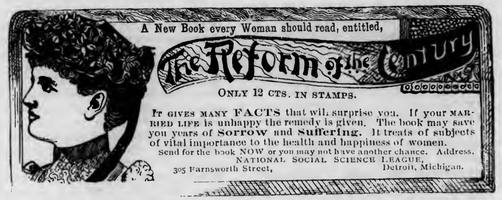

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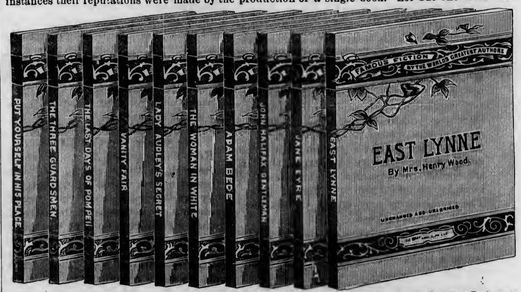

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I have twenty-six colonies and work one-half for extracted honey and the rest for comb honey. I get the honey if it is to be had. In ten or fifteen days they will build queen cells and swarm out. I cage the queen and lay the cage in front of the entrance; then I cut out all queen cells. The swarm then comes back and goes in and begins to work as if nothing had happened. Sometimes they will build queen cells and swarm out the second time. I then cage the queen and cut out queen cells, when they will come back, go in and give up swarming Sometimes I have three or four swarms a day. As fast as they swarm I cut out queen cells, so as to be ready to double up all swarms that come. I had thirty four swarms the past season and doubled up all but one that I hived. I am fifty four years old and do all the work in the apiary myself. As it has benefited me in managing my apiary in this way I want others to be helped by it. I found it out by experimenting.

ARTIFICIAL AND BARNYARD MANURES.

Their Composition and Valuation as Stated by a Scientific Agriculturist.

The functions of manures, as briefly stated by a professor of the University of North Wales, who has conducted extensive manurial experiments, are: 1. In many cases the improvement of the mechanical and physical condition and the texture of the soil to which the manures are applied. Thus lime, when applied to sour land, decomposes, and therefore renders harmless, the sour organic acids whose presence in the soil is the cause of the sour or acid condition of the land. When farmyard manure is applied to land the texture and physical condition of the soil is much improved by the organic matter of which this manure is largely composed. 2. In many cases manures act on plant food already present in the soil and convert this plant food into such a condition that it can be absorbed by the roots of plants. The manurial value of lime is due principally to the action of this manure on the food of plants already present in the soil. 3. The most important function of manures is to supply plant food necessary for the growth of crops which is deficient in the soil. The necessary constituents of plant food that are generally deficient in soils are nitrogen, phosphoric acid and potash.

Nitrogen occurs in manures as nitrates, e. g., nitrates of soda: ammonia salts, e. g., sulphate of ammonia: organic nitrogen, e. g., dried blood. Nitrogen as nitrates is immediately available as plant food. Nitrogen as ammonia salts soon becomes available. Nitrogen as organic nitrogen is much more slowly available.

Phosphoric acid, combined with lime, is generally present in manures as insoluble phosphate of lime, e. g., bone meal and basic slag; soluble phosphate of lime, e. g., superphosphates. Insoluble phosphate of lime is converted into soluble, or superphosphate, by treating it with sulphuric acid. Soluble phosphates are generally more active than insoluble phosphates in promoting plant growth.

Potash is the valuable ingredient in kainit and muriate of potash. Potash has generally a better effect on light than on heavy soils. Superphosphate and nitrate of soda should not be mixed, or if mixed must be sown immediately. This also applies to the mixing of basic slag and sulphate of ammonia.

Artificial manures should be purchased on a guaranteed analysis, and the source from which the fertilizing ingredients of the manure are derived should be stated. This precaution is especially necessary in purchasing bone or mixed manures. The percentage of nitrogen in a manure should be stated in its equivalent of ammonia, that of insoluble phosphoric acid as phosphate of lime, soluble phosphoric acid as phosphate of lime, and that of potash salts in their equivalent of potash. Artificial manures are valued according to the quantities of nitrogen, soluble phosphate of lime, insoluble phosphate of lime and potash they contain.

Farmyard manure contains all the ingredients of plant food. This manure is exceedingly variable in quality, as the quality varies with the nature of the food given to the animal, the nature and amount of the litter used, the method by which the manure is produced and its treatment from the time of production until it is applied to the land.

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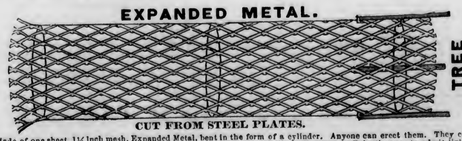

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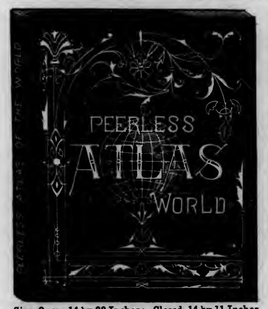

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FERTILIZERS.

How and When to Use Ground Bone. Sulphate of Ammonia as Plant Food.

The New Jersey station's valuation of the year 1891 for the nitrogen and phosphoric acid in ground bone of the different grades of fineness is about 10 per cent. lower than in 1890. Ground bone is in good repute among farmers, and many when buying complete fertilizers reject those brands in the preparation of which bone has not been the chief material used. The reasons for this are ascribed to a lack of familiarity with the phosphates from other sources, the development and use of which have been comparatively recent, and also to a more permanent effect observed from the use of bone. An important consideration in the use of manures, especially on poor lands, is permanent enrichment. Bone is suited to attain this object, and other materials cannot be well substituted for it, although they may be called by the same name and be quite as valuable from a commercial standpoint.

When a farmer is satisfied that ground bone is a useful fertilizer for his conditions of soil and methods of practice, it is believed at the station that it is more economical and satisfactory for him to buy it as such rather than in the form of a complete fertilizer of which it forms the base; first, because the same kind and quality of fertilizing ingredients are much cheaper, and, second, because of a reasonable certainty that what is bought is really bone. As regards dissolved bone and superphosphates with potash, the samples examined at the New Jersey station this year were of good quality and with few exceptions fully up to their guarantee, which in connection with their selling price would seem to make them valuable substitutes for complete manures. So, in many cases (of which wheat is given as one), according to the station bulletin, the cheaper superphosphates with potash may be quite as effective for certain crops as a complete manure containing a low percentage of nitrogen.

Sulphate of ammonia is of special interest to the agriculturist, as, with the exception of Peruvian guano, it is the only commercial source of ammonia within the farmer's reach. It is prepared from the ammoniacal water, which is obtained in the manufacture of gas from coal. The sulphate, not being a complete manure, is seldom if ever applied alone, not even when in a course of rotation it follows a phosphatic manure. It is very useful when employed as an adjunct to the slow acting manures, it increases the vigor of the plants and enables them to take up more of the other kinds of food in a given time than they would or could otherwise do.

Sulphate of ammonia may be applied either as a top dressing or it may be worked in the soil just previous to the seeding of a crop. It is usually applied at the rate of 100 to 125 pounds per acre. Many farmers mix the sulphate with three or four times its bulk of loam in order to insure a more even distribution. Sulphate of ammonia is most largely employed on grain crops. Progressive farmers also use light dressings of the sulphate with fine effect on their grass lands, not only after the growth is well started in the spring, but again after mowing. Some farmers claim that it pays to top dress mangolds and similar crops with sulphate. Messrs. Lanes and Gilbert, in their famous field experiments, proved the efficiency of sulphate of ammonia as an adjunct of slow acting manures and in inviting plants to utilize quickly and more fully the manures within their reach. Their most noteworthy results were gained when the sulphate was applied to land that had been previously enriched for several years by the accumulation of mineral and other manuring. Their largest crops were obtained when mineral and nitrogenized manures were employed together.

Bee Notes.

Let your bees severely alone in freezing weather. Disturbance is injurious. It causes commotion in the cluster and an unnecessary consumption of food.

Guard well the entrances from mice. If these pests force an entrance they will eat the honey of the bees, mutilate the comb and perhaps ruin the colony. If entrances have not been already protected let it be done at once. It is done by tacking a slip of tin, an inch wide, on the upper side of entrance three-eighths of an inch from bottom board. This will secure the safety of the colony. Mice are not apt to cut into a solid board, and the upper part being tinned they will be defeated in all their attempts.

Do not neglect to give those colonies, whenever the weather will allow, that have barely enough of provision, a fresh supply of the sugar paste described in a former article. It is made by grinding granulated sugar into flour and then working it into a paste or dough with extracted honey or sugar molasses. Put it on top of the frames over the cluster of bees on muslin perforated with holes here and there for the bees to reach it. It is better to keep a surplus of food than to allow the colony to become destitute, or nearly so, before feeding. Bees become weak when so reduced and are very difficult of recuperation.

Let all those who manufacture their own hives and bee fixtures be diligent in making and painting their hives while they have leisure. It is a good time to repaint old hives, when the weather is sufficiently cold to keep the bees from flying, but not cold enough to freeze the paint. This saves transferring the bees into another hive for this purpose, says the Philadelphia Farm Journal.

Crossing Corn.

Different varieties of corn, including dent, flint, soft, sweet and popcorn, have been crossed by artificial pollination at the Kansas station. The first year the effects of the crossing were visible in comparatively few instances, and those mostly among the sweet varieties. Ears more or less blended (and sometimes exactly intermediate between the two parental types) were generally the product of the second generation. The third year showed for the most part a product true to the seed planted; by selecting grains from a single ear or from different ones ears are produced with grains that are as a rule like those planted. Thus it appears that any selected cross can be perpetuated, and improvement in varieties can be made by crossing and perpetuating these crosses.

A Good Stone Drain.

A Pennsylvania correspondent writing to The Rural New Yorker, says: "The following method of making a drain may be useful to those who have soils like mine. I dig a ditch two and a half feet deep, at which depth I reach hard pan. Then in the center I dig a smaller one, both sides of which slope to a point about six inches down, leaving a two inch shoulder on each side of the top. The small ditch I cover with large stones, which rest on the shoulders on both sides, and then fill up with small stones to within one foot of the top. This plan I have found very successful."

FRUIT AND FLOWERS.

WISTARIA AS A WINTER BLOOMER.

Forcing Hardy Flowering Shrubs for Winter Blossoms.

With the greatly increased demand for winter flowers, florists have pressed into service for winter forcing plants

THE WISTARIA IN A POT.

that formerly were scarcely thought of for such a purpose. Among these are many of the hardy flowering shrubs, such as lilacs, deutzias, spiræas, hybrid perpetual roses, etc., besides some hardy perennial flowers. And now German gardeners are employing the hardy wistaria as a forcing plant for winter flowers. A German exchange gives directions for growing plants for this purpose:

Select a strong young plant in the spring and pot it in rich loam in a good sized pot, and keep it growing through the summer, allowing it to rest in autumn. By midwinter cut back all the shoots but the strongest and start again into growth. Tie up erect the remaining shoot and guard it carefully that it be not broken. At the end of the second season the stem should be several feet in height. Before starting for the third year's growth cut the stem back to a convenient height, say four or five feet. The head, consisting of several branches, will now begin to form, and the fifth year it can be brought into bloom. The branches and young shoots can be allowed to hang naturally, drooping all about the stem. If properly managed, a plant will remain in good condition, blooming annually, for many years. Forcing is quite easy, as only a moderate temperature is required. If kept in too much heat the buds will drop.

At the exhibition of the Massachusetts Horticultural society the new seedling strawberry "Beverly" received several prizes.

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